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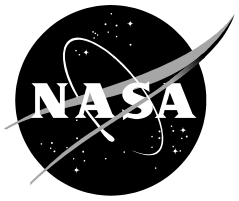

Effect of Atmospheric Wind and Upstream Buildings on the Flow Quality in the Test Section of the 80- by 120-Foot Wind Tunnel

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July 2020

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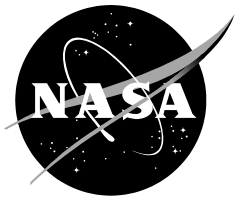

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NOMENCLATURE

I_u	relative turbulence intensity in x-direction, $\sigma_u \,/\, U$ (%)
I_v	relative turbulence intensity in y-direction, $\sigma_v \,/\, U$ (%)
I_w	relative turbulence intensity in z-direction, $\sigma_w \,/\, U$ (%)
I_{uu}	relative turbulence intensity in x-direction, $\sigma_u \,/\, \lvert\bar{\boldsymbol{V}}\rvert$ (%)
I_{vv}	relative turbulence intensity in y-direction, $\sigma_v \,/\, \lvert\bar{\boldsymbol{V}}\rvert$ (%)
I_{ww}	relative turbulence intensity in z-direction, $\sigma_w \,/\, \lvert\bar{\boldsymbol{V}}\rvert$ (%)
I_{uvw}	overall relative turbulence intensity, $\sigma_{uvw} \,/\, \lvert\bar{\boldsymbol{V}}\rvert$ *(%)*
u, v, w	instantaneous local velocity components in x, y, and z directions, respectively
U, V, W	local mean velocity components in x, y, and z directions
$\boldsymbol{V}$	local velocity
$\lvert\bar{\boldsymbol{V}}\rvert$	local mean wind speed, $\sqrt{\{(U^2 + V^2 + W^2)\}}$
V_{wind}	ambient wind speed ahead of inlet
V_{ts}	velocity inside test section
σ_u	rms fluctuation in x-component of velocity, *stddev(u)*
σ_v	rms fluctuation in y-component of velocity, *stddev*(v)
σ_w	rms fluctuation in z-component of velocity, *stddev*(w)
σ_{uvw}	average rms velocity fluctuation, $\sqrt{\{(\sigma_u{}^2 + \sigma_v{}^2 + \sigma_w{}^2) \,/\, 3\}}$
Ψ	turntable yaw angle
IST	Integrated Systems Test
MVC	Mountain View Complex
NFAC	National Full-Scale Aerodynamics Complex
NREL	National Renewable Energy Laboratory
VFD	variable frequency drive
40x80	40- by 80-Foot Wind Tunnel
40x80x120	40- by 80-Foot/80- by 120-Foot Wind Tunnel
80x120	80- by 120-Foot Wind Tunnel

EFFECT OF ATMOSPHERIC WIND AND UPSTREAM BUILDINGS ON THE FLOW QUALITY IN THE TEST SECTION OF THE 80- BY 120-FOOT WIND TUNNEL

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Ames Research Center

SUMMARY

The effect of upwind buildings on flow quality in the test section of the 80- by 120-Foot Wind Tunnel (80x120) housed at the National Full-Scale Aerodynamics Complex (NFAC) at NASA Ames Research Center was modeled at reduced scale. A 1/50th-scale model of the 80x120 leg was placed on the turntable in the test section of the full-scale NFAC 80x120 wind tunnel. Ambient wind was simulated by means of a fixed linear array of six blowers mounted upstream of the NFAC turntable. NFAC turntable rotation was used to change ambient (atmospheric) wind direction. Models of existing upwind buildings and the planned Google Campus buildings (Googleplex) were constructed at 1/50th scale. In addition, a variety of upwind blockage conditions were studied, using rectangular bodies to simulate either a two-dimensional (2D) or three-dimensional (3D) blockage directly ahead of the inlet. Computer-controlled surveys of test section flow quality were measured using a Cobra probe to provide all three orthogonal velocity components. Surprisingly, measurements indicate that test section flow quality will be unaffected or slightly improved by the upwind presence of the Google Campus. A possible explanation is discussed.

INTRODUCTION

The National Full-Scale Aerodynamics Complex (NFAC) at NASA Ames Research Center is operated as part of the Arnold Engineering Development Complex. The 80- by 120-Foot Wind Tunnel (80x120) is an open circuit wind tunnel (Fig. 1). Air is drawn in through the inlet and passes through the contraction on its way to the test section. Winds and turbulence can enter through the inlet and affect test section flow quality. In this way, the test section is subject to external atmospheric conditions. It is important to minimize external turbulence, for example by controlling the size and placement of upwind buildings, so that the test section flow quality is preserved.

In 1987, the year the 80x120 test section was dedicated, an internal NASA memo established a building exclusion zone in front of the 80x120 inlet. In 2004, a second memo was written that waived the building restriction but introduced height restrictions in the 80x120 right-of-way.

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Figure 1. Aerial view of the 80- by 120-Foot Wind Tunnel.

This allowed for future construction at NASA Ames Research Center near building N-258 (Fig. 2). At the time of this report, there are several existing buildings located in this exclusion zone, all of which adhere to the height restrictions of the 2004 memo. In 2013, however, construction began at NASA Ames in the vicinity of building N-258 that, if completed, would not adhere to the height limitations established in the 2004 memo.

The main concern of the current research is that atmospheric wind approaching the NFAC 80x120 inlet from the direction of the Google Campus will carry the wake from the new structures into the inlet and thus reduce the test section flow quality. The objective of the current research is to quantify any change in test section flow quality associated with the upwind presence of the Google Campus.

Google 1.0 Phase I and Phase II Studies

Google provided *Vanity Fair* with an artistic rendering of the 42-acre "Bay View" Campus reported in February 2013 (Fig. 3 and Ref. 1). The Google 1.0 buildings were described as "bent rectangles." Figure 4 shows natural landscaping ahead of building N-258 (Google Earth, May 2012). Figure 5 shows a close-up of the same ground area before ground-breaking (October 2012), and Figure 6 after the ground cover had been removed (March 2015). The "bent rectangle" Google 1.0 building shapes are clearly visible in the cleared ground above building N-258 in Figure 6.

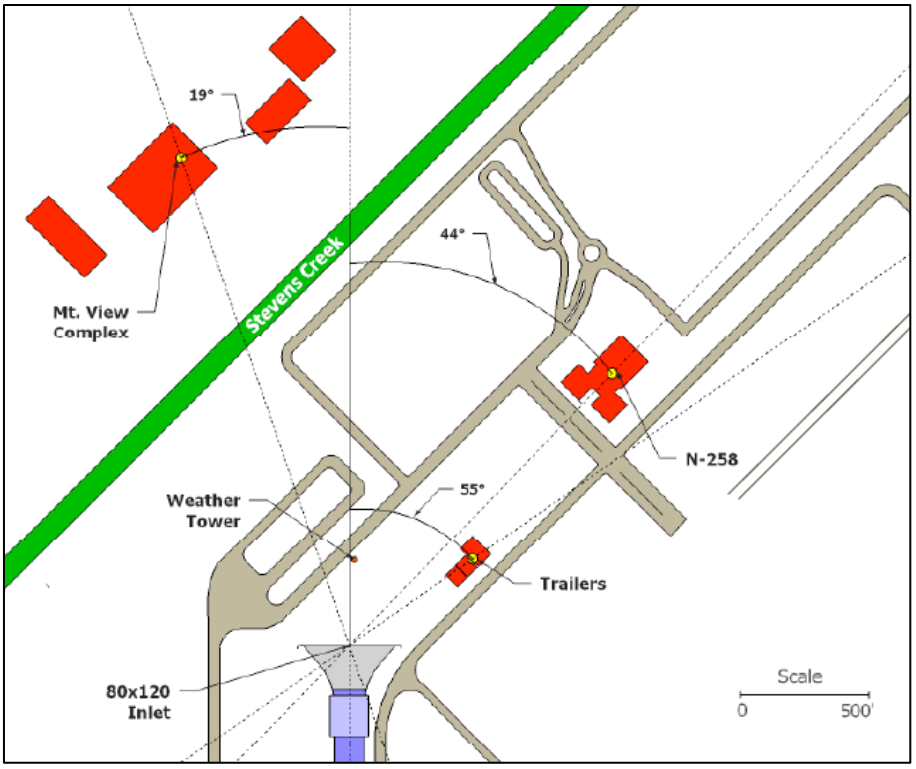


Figure 2. Schematic showing 80x120 inlet with existing upwind buildings.


Figure 3. *Vanity Fair* rendering of Googleplex 1.0 (02/22/2013).

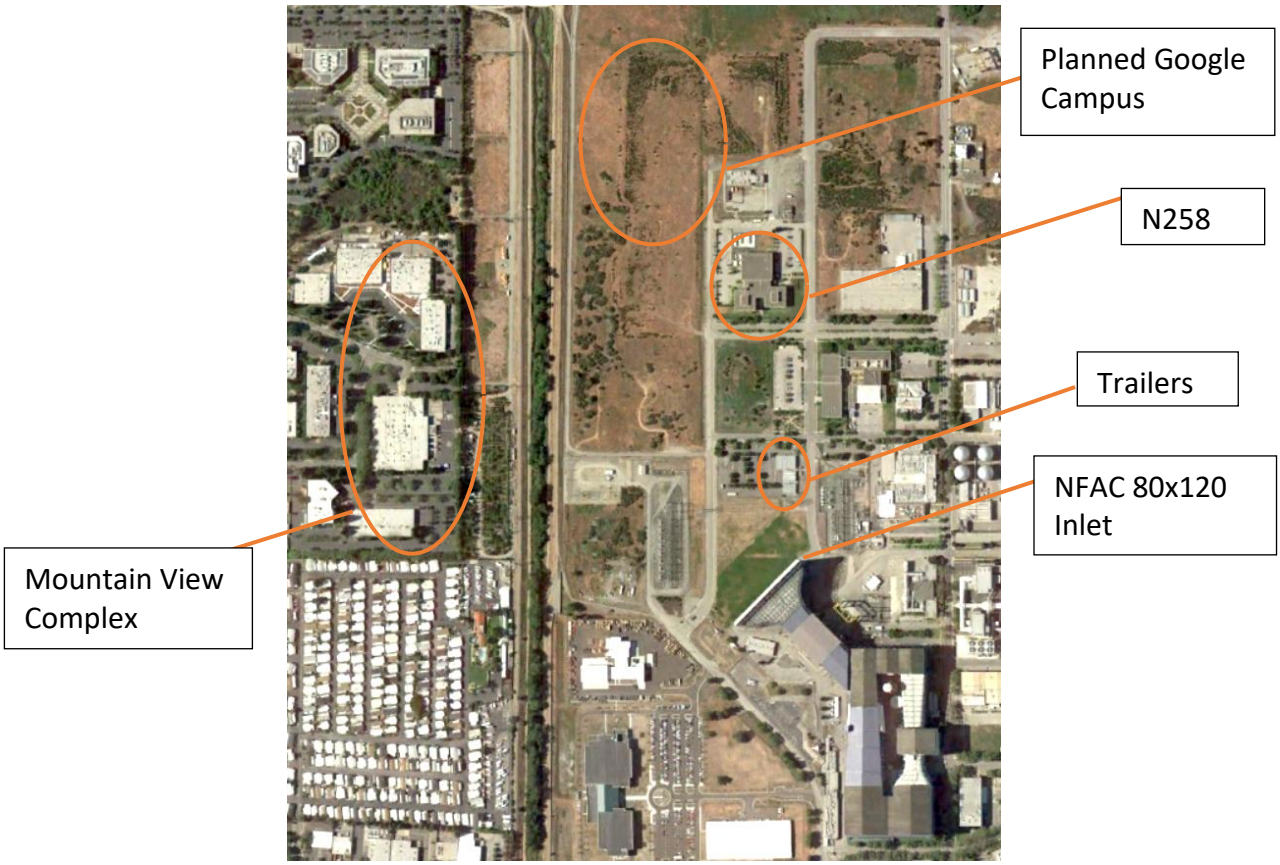


Figure 4. Existing buildings (Ames N-258 + trailers + Mountain View Complex) and area for planned Google Campus before ground-breaking (Google Earth, 05/19/2012).

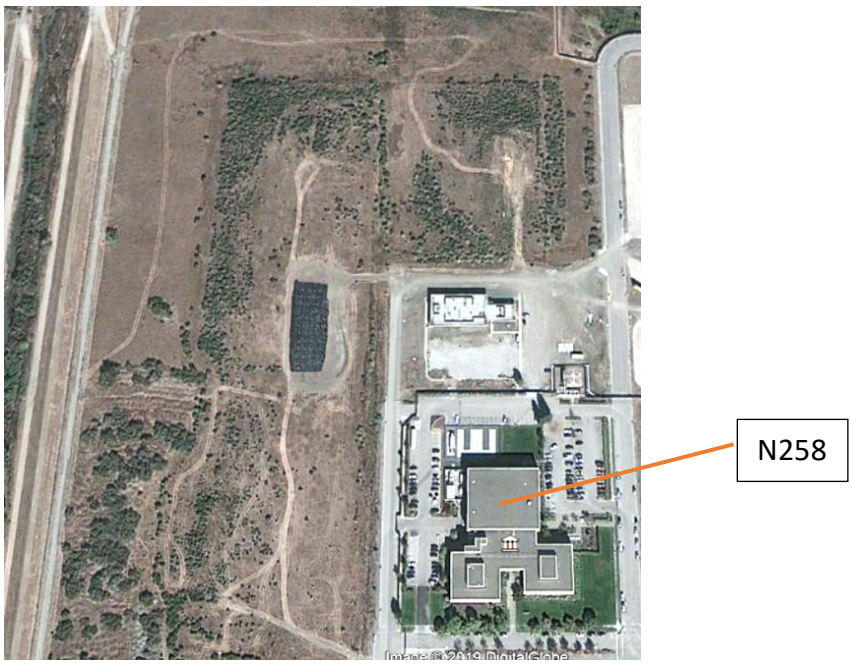


Figure 5. Close-up before ground-breaking (Google Earth, 10/16/2012).

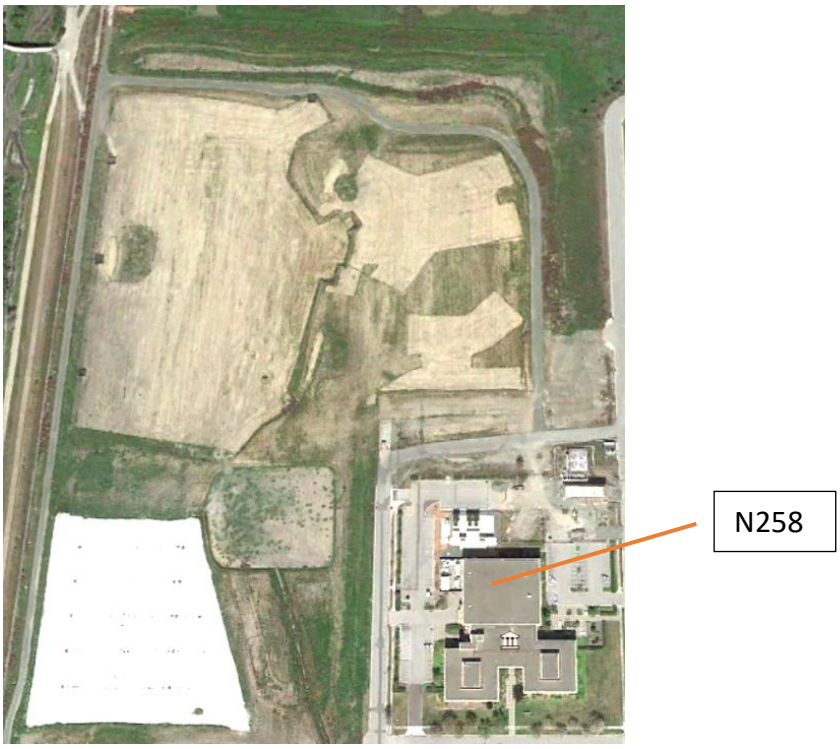


Figure 6. After ground cover has been partially removed (Google Earth, 03/28/2015).

Initial research, referred to as Phase I, occurred in 2013 and determined the sensitivity of the aerodynamic flow quality *ahead of the inlet* to upwind blockage. The Phase I report (Ref. 2) documents the turbulence level in the plane of the model inlet for four blockage conditions:

1. No buildings.
2. Existing buildings (Mountain View Complex (MVC) + NASA Ames buildings, Fig. 2).
3. Existing plus future Google 1.0 buildings.
4. Generic two-dimensional (2D) buildings located directly upstream from the inlet.

At the start of the Phase I study the existing 1/50th-scale 80x120 model had the egg-crate inlet of the original full-scale facility (circa 1982) and did not reflect the splayed inlet vanes of the current full-scale geometry. The 1/50th-scale contraction cone was quickly modified to reflect the current full-scale facility while the splayed inlet vanes, horizontal splitter plates, and high-loss screen insert were under design to simulate full scale, allowing preliminary testing to begin ahead of the inlet while inlet hardware was still under construction.

Google 1.0 testing is illustrated in Figure 7. The “bent rectangles” of the Google Campus are shown in the foreground of Figure 7(a) with the 1/50th-scale 80x120 wind tunnel model inlet in the background. The MVC is visible at the right-hand-side of the image. The view from the inlet

towards the Google Campus is illustrated in Figure 7(b). All buildings were constructed at 1/50th-scale from 1/2-inch-thick foam-core poster board and 300-mph wind tunnel tape. The Cobra probe is shown suspended immediately in front of the inlet. Phase I velocity measurements were taken just ahead of the inlet because the inlet hardware was unavailable at the start of testing and therefore the inlet was completely open.

Phase I results indicate that planned future buildings would cause no significant increase in turbulence level in the plane of the inlet for quiescent atmospheric conditions (i.e., zero wind) for the range of test section velocity considered, 50 to 100 knots. Additional Phase I testing was planned to include the effect of atmospheric wind using the NFAC fan drive to provide 0- to 20-mph winds, and rotation of the turntable to vary wind direction. Unfortunately, nonzero wind testing was left incomplete when the NFAC 80x120 test section had to be vacated earlier than anticipated.

Phase II testing was conducted in 2014 and used newly designed and built inlet guide vanes installed in the 1/50th-scale 80x120 wind tunnel model inlet (Figs. 8 and 9) making the model geometrically scaled and representative of the current full-scale tunnel. A Cobra probe was installed in the model test section, and test section velocity survey measurements were taken for four blockage conditions:

1. Baseline (no upwind buildings).
2. Existing buildings (MVC + NASA Ames buildings).
3. 2D blockage. Rectangular geometries were placed directly in front of the inlet. This was an attempt to provide a generic building-geometry database that could prove helpful for future testing and predictions as it was assumed to represent a worst-case scenario for flow quality in the NFAC 80x120 test section.
4. Spires at inlet. Additional testing was also conducted in Phase II to assist future test planning for the National Renewable Energy Laboratory (NREL). NREL has voiced interest in returning to the NFAC 80x120 wind tunnel to perform a small-scale wind turbine test with a simulated atmospheric boundary layer and higher free-stream turbulence than is normally provided to NFAC customers. Spires were therefore installed immediately in front of the model inlet to simulate an atmospheric boundary layer inside the test section with an associated increase in turbulence level.

Unfortunately, Phase II testing did not include testing with atmospheric winds because the NFAC 80x120 test section had to be prematurely vacated once again. “WIND ON” testing was postponed until another window of opportunity opened. Test section velocity and turbulence measurements acquired during Phase II testing are reported in References 3 and 4. It is noteworthy that Google 1.0 buildings were not tested in Phase II as they had already been investigated in Phase I and were shown to have minimal effect on flow quality immediately ahead of the inlet for quiescent atmospheric conditions. Test section velocity was limited to either 50 knots or 100 knots only, as in Phase I.



Fig. 7(a). View from Google 1.0 campus looking towards 80x120 inlet.

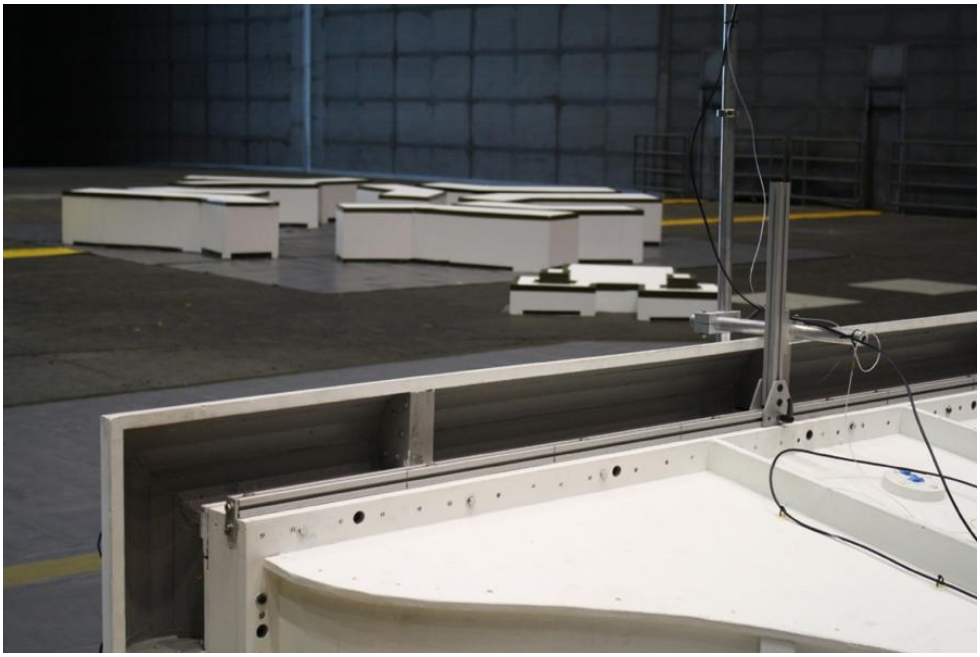


Fig. 7(b). View from 80x120 inlet looking towards Google 1.0 campus.

Figure 7. Google 1.0 testing.

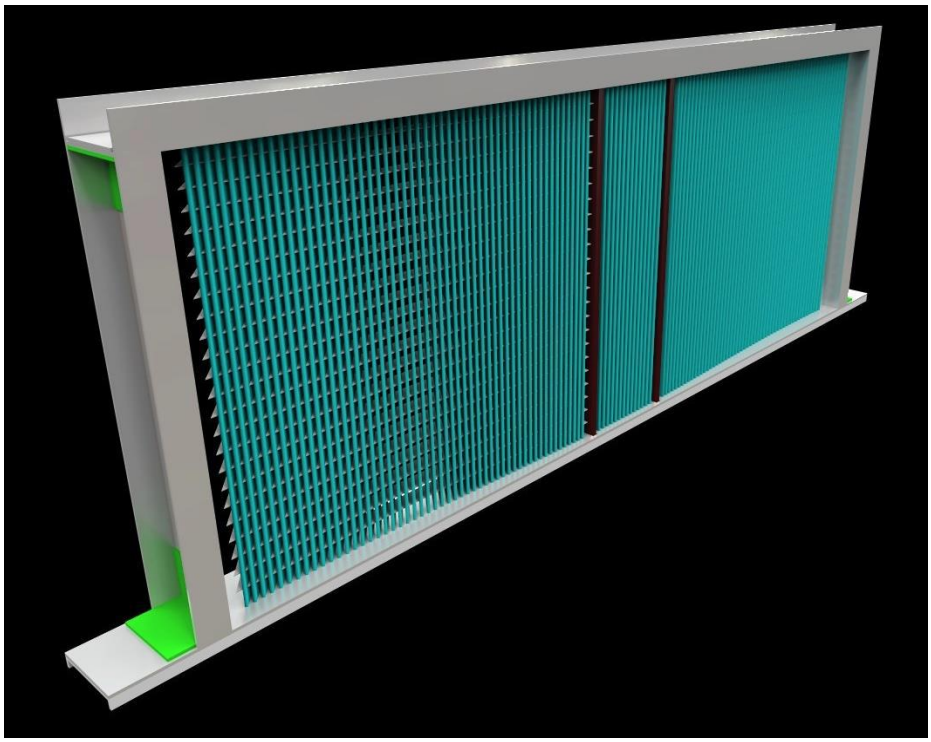


Figure 8. Inlet guide vanes.

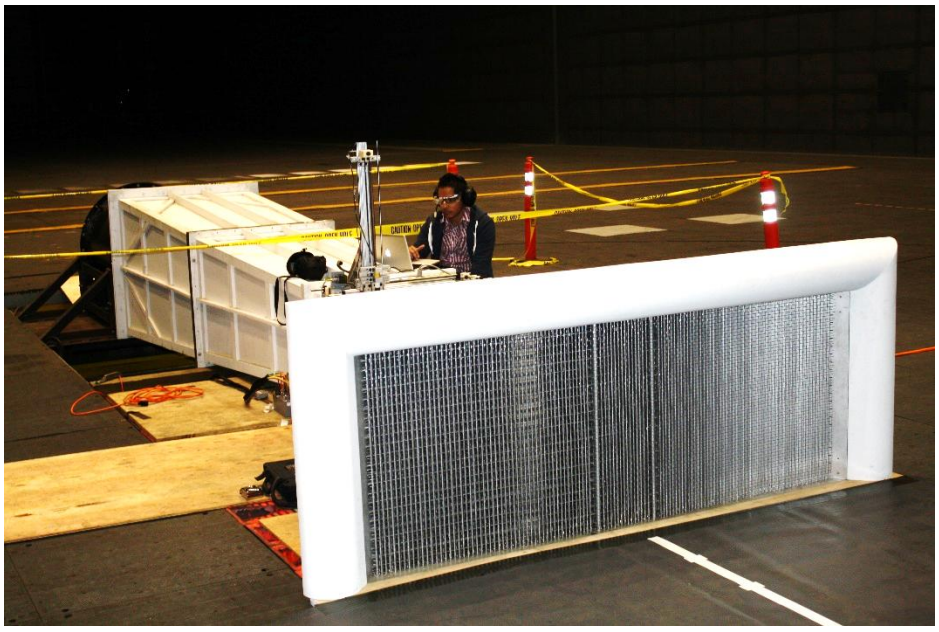


Figure 9. Guide vanes installed in model inlet.

Activity at the Googleplex site then stalled for a significant time. The Google site was once again completely cleared of vegetation as shown in Figure 10. Google had decided against pursuing the Googleplex 1.0 "bent rectangle" design. A new Google 2.0 campus design consisting of three buildings surfaced, as illustrated in Figure 11 (Ref. 5, June 2016). Figure 12 shows a close-up of roof panels on the largest of the three buildings (building G1). Each roof panel has compound curvature and each roof panel edge is discontinuous from the adjacent roof panel allowing for window placement. Figure 13 shows the campus location totally cleared of all vegetation by May 2017. Incomplete concrete foundations are shown under construction in Figure 14 (March 2018) and roof assembly is visible in Figure 15 just over 1 year later (April 2019).



Figure 10. View of Googleplex site ahead of NFAC 80x120 inlet (Google Landsat, 2018).


Figure 11. Preliminary design for Google 2.0 campus (Bayview Concept, Ref. 5).

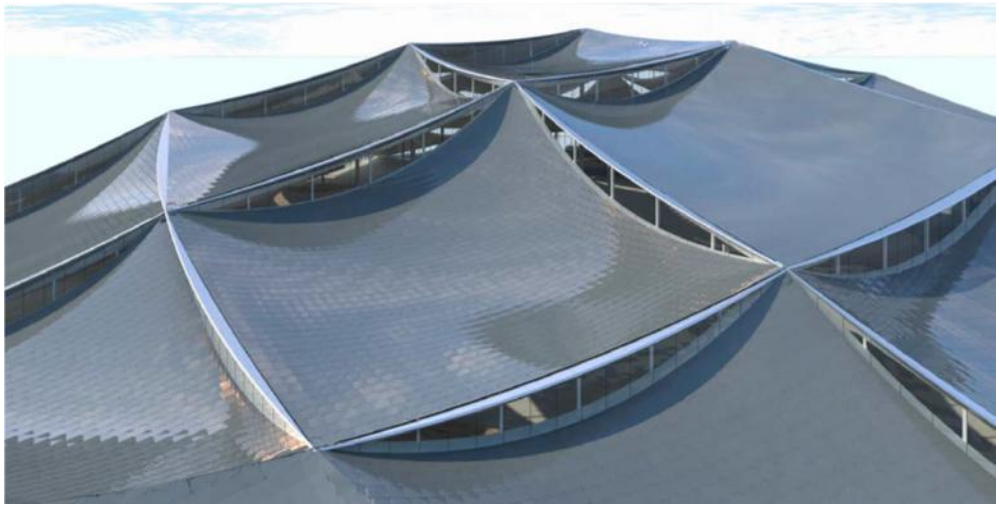


Figure 12. Close-up view of roof panels on building G1 (Bayview Concept, Ref. 5).

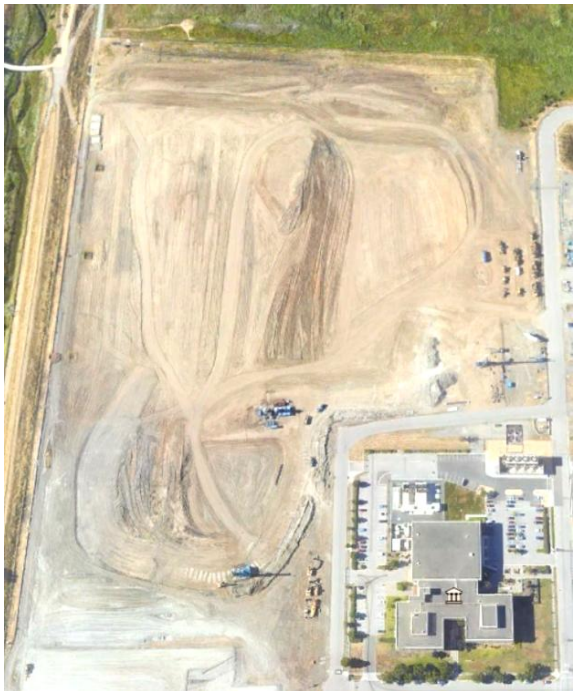


Figure 13. Google Earth, 05/21/2017.



Figure 14. Google Earth, 03/28/2018.



Figure 15. Google Campus under construction (Google Earth, 04/29/2019).

Current Knowledge of Atmospheric Winds Ahead of the NFAC 80x120 Inlet

Measurements of atmospheric wind speed and direction made ahead of the NFAC 80x120 inlet by Zell during a FLOCAL (flow uniformity and calibration) test are reported in Reference 6. At the time of the FLOCAL measurements, the weather tower was located 328 feet upstream from the inlet face and 27 feet east of the tunnel centerline with measurement stations 30, 60, and 100 feet above ground level. Wind measurements provided by the 100-foot weather tower station were used to create the wind rose shown in Figure 16(a) (Fig. 56 of Ref. 6). Rotating this wind rose 76.7 degrees so that true north is at the top of the page shows that the winds are mostly from the northwest between 0 and 20 mph and illustrates that the wind tunnel is well aligned with prevailing winds at the site (Fig. 16(b)).

Since the NFAC inlet centerline is nominally 66 feet above ground level, and the atmospheric wind is expected to increase with elevation, use of the 100-foot measurement station in constructing the wind rose clearly led to an overestimate of wind speed ahead of the inlet. The 60-foot weather tower measurement station would probably have been a better choice. Indeed, Eckert (Ref. 7) presents weather tower measurements made at the proposed inlet location, at a 60-foot elevation, over approximately 2 calendar years. Absolute maximum mean wind speed measurement was shown to be closer to 14 knots, or 16.1 mph, occurring in May. Typical mean wind speed was below 4 knots before 10 a.m. or after 10 p.m., with peak wind speed occurring between 2 p.m. and 4 p.m.

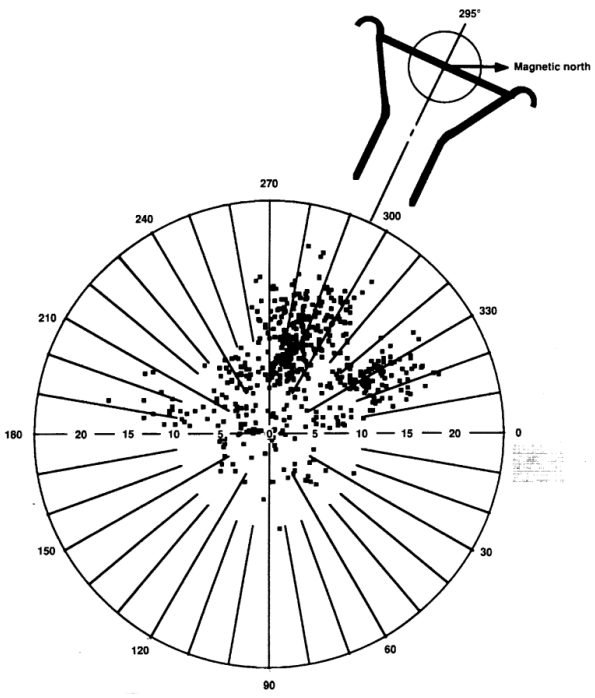


Figure 56. FLOCAL wind rose.

Fig. 16(a). Wind rose for 80x120 wind tunnel inlet (Fig. 56 of Ref. 6).

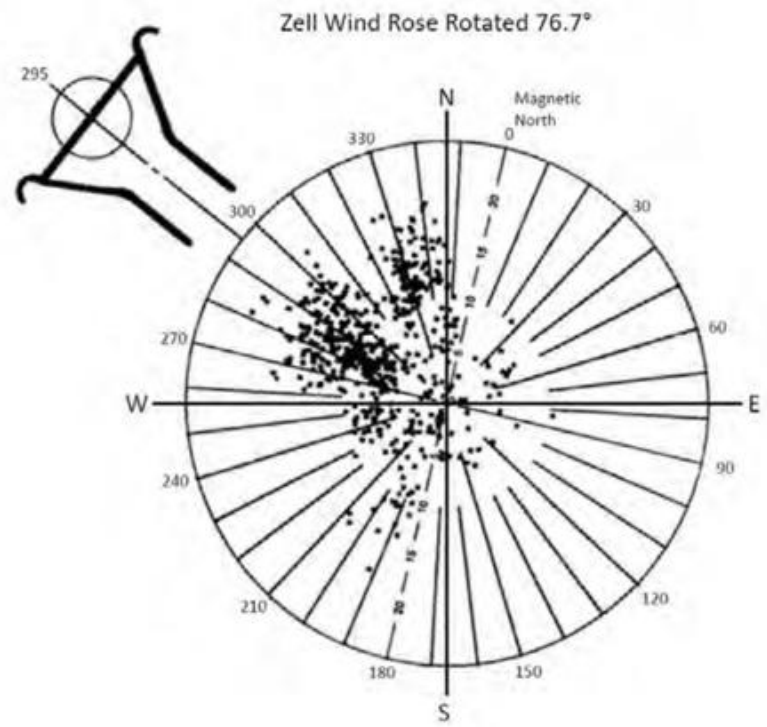


Fig. 16(b). Wind rose for 80x120 wind tunnel inlet. (Fig. 16(a) rotated 76.7 deg.)

Figure 16. Wind rose for 80x120 wind tunnel inlet.

Current Knowledge of NFAC 80x120 Inlet Performance

Inlet performance is the key to maintaining a uniform velocity distribution with low relative turbulence intensity in the test section. Figure 17 presents test section turbulence measured at both full scale and 1/15th scale (Fig. 17 of Ref. 8). Only full-scale data for I_u and I_v are presented, with I_v being significantly greater than I_u. Zell (Ref. 6) showed that there was no discernible difference between lateral and vertical turbulence intensity measurements in the NFAC 80x120 test section and claimed the high levels of lateral and vertical turbulence intensity compared to axial turbulence intensity were typical of subsonic wind tunnels.

Full-scale measurements with $V_{ts} > 90$ knots are plotted as solid symbols in Figure 17 and show turbulence intensities I_u and I_v to be independent of V_{wind}/V_{ts} for V_{ts} close to maximum tunnel speed. This implies that test section relative turbulence intensity is independent of external wind level for high test section velocities. Since the open symbols refer to full-scale measurements for $V_{ts} < 90$ knots, it is clear that increased test section turbulence can be expected for lower test section velocity. Without more information, no conclusions can be reached regarding the sensitivity of test section turbulence to V_{wind}/V_{ts} at reduced tunnel speed.

TEST FACILITY AND TEST HARDWARE

On June 9, 2017, during the Mars 2020 Parachute test, the most downstream part of the west wall of the NFAC 80x120 test section was damaged. Wall panels were sucked into the tunnel and damaged all 15 fan blades on the lower fan closest to the outside of the wind tunnel circuit. This immediately removed both the 40x80 and the 80x120 wind tunnels from operational status as they share a common drive system. An investigation immediately ensued. It was determined that the quickest way to place the 40x80 wind tunnel back into service and mitigate any impact on the 40x80 test schedule was to remove all 15 blades from the single damaged fan. Removal of every 5th fan blade from each of the 5 undamaged fans would leave each undamaged fan with 12 remaining blades. Twelve of the removed blades were then installed on the 6th fan to match the other 5 fans. This operation was referred to as “Return-To-Service.” An Integrated Systems Test (IST) followed before the 40x80 wind tunnel was declared operational, albeit for a slightly reduced maximum velocity in the 40x80 test section.

NFAC 80x120 Test Section

The NFAC 80x120 wind tunnel circuit remained inoperable until the damage to the west wall of the NFAC 80x120 test section was repaired— and this took some time. (Indeed, repairs to the 80x120 test section wall only recently commenced in August 2019.) This provided a window of opportunity to continue Google testing, now referred to as Google 2.0 testing, in the 80x120 test section. NFAC fans would not be available to simulate atmospheric winds until repairs to the 80x120 test section wall had been completed. If an alternative “WIND ON” source could be found that was acceptable to management, Google testing inside the 80x120 test section might continue during this downtime for the 80x120 wind tunnel.

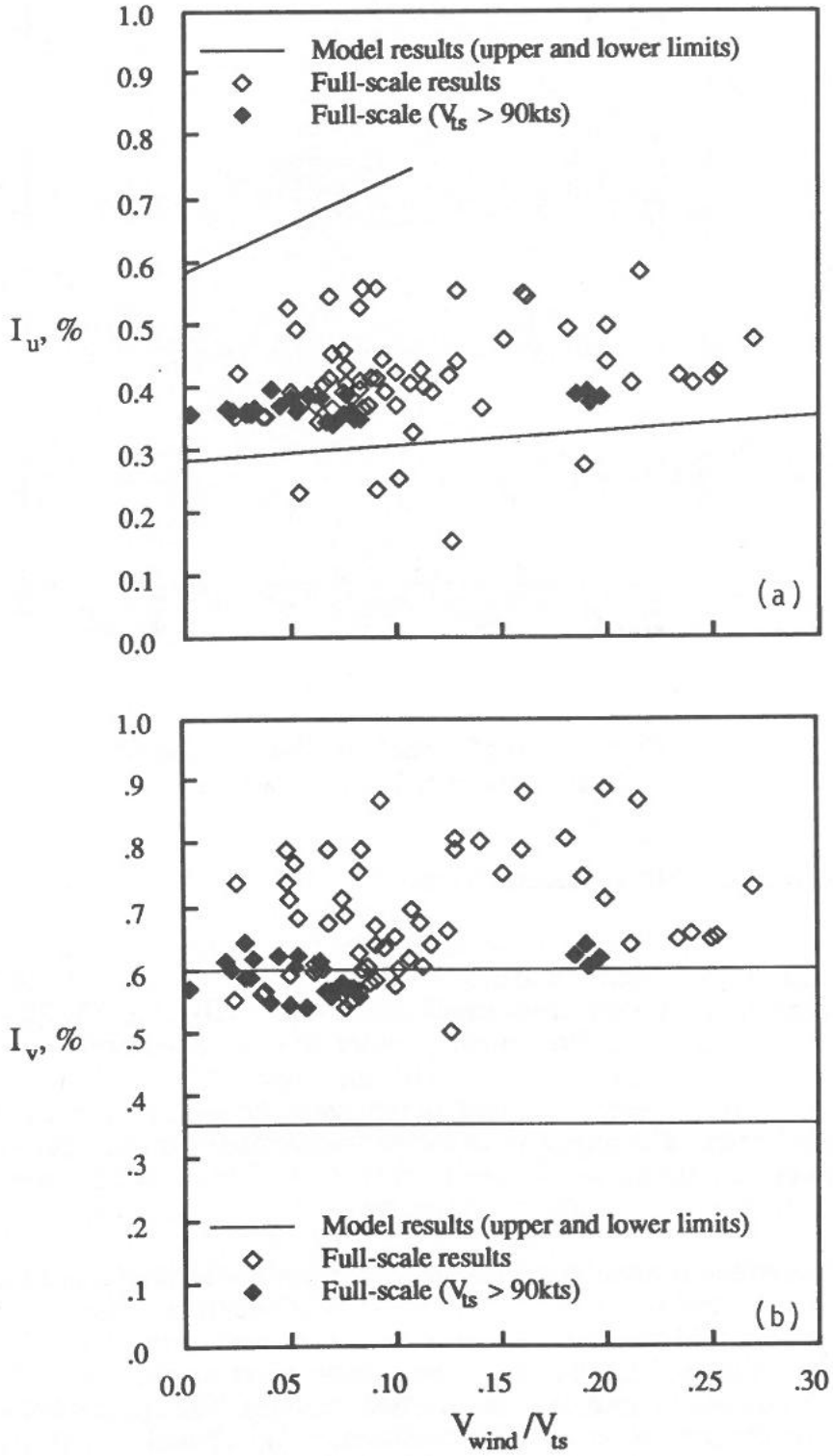


Figure 17. Effect of atmospheric wind on relative turbulence intensity levels in 1/15th-scale and full-scale 80x120 wind tunnel (Fig. 17 of Ref. 8).

The test section of the NFAC 80x120 wind tunnel remained the best location to conduct testing because of its large size and controllable environment. The test section is 79.2 feet high, 118.8 feet wide, and 120 feet long—the cross-section dimensions being reduced from the original 80 feet high by 120 feet wide because of the acoustic liner. NFAC Vane Set 4 remained closed throughout the complete test program isolating the NFAC 80x120 leg from the 40x80 circuit. Closing Vane Set 4 eliminated flow through the NFAC 80x120 test section and allowed the NFAC 40x80 wind tunnel to continue operations without impact from Google 2.0 testing in the NFAC 80x120 test section.

Testing was conducted in winter and spring of 2019 during daylight hours. There was no attempt to control recirculation within the full-scale test section, but natural recirculation levels were monitored before and after each run. Sources of recirculation that went uncontrolled include atmospheric winds entering the test section through the inlet, thermally induced wind drafts due to full-scale 80x120 wall-temperature differentials, simulated ambient wind generated upstream of the 1/50th-scale inlet, and 1/50th-scale fan exhaust.

1/50th-Scale 80x120 Wind Tunnel Model

The 1/50th-scale model of the NFAC can be configured as a complete model that includes the NFAC 40x80 circuit, the NFAC drive system, and the NFAC 80x120 leg. The main goal of the current study was to simulate atmospheric winds coming from the proposed Google Campus location towards the NFAC 80x120 wind tunnel inlet and determine the conditions (such as wind speed and direction, test section velocity) that would compromise test section flow quality. Secondary goals were to document inlet performance for atmospheric winds approaching the inlet from ahead of the inlet for –90 degrees < turntable yaw (Ψ) < +90 degrees only. For this limited range of wind direction, the 1/50th-scale 40x80 circuit was deemed unnecessary. The only components used from the 1/50th-scale 40x80x120 model were therefore the 80x120 inlet with its cowling, the contraction, and the test section (identical to Google 1.0 Phase II testing). Figure 18 shows a sketch of the model inlet mounted as close as possible to the axis of rotation of the turntable to minimize lateral displacement of the inlet with turntable yaw.

The plan was to match the maximum test section velocity in the model-scale wind tunnel with that available in the full-scale NFAC 80x120 wind tunnel. The fan chosen to drive the 1/50th-scale 80x120 leg was a single D/47 vane axial fan from the Chicago Blower Corporation (Fig. 18). A variable frequency drive (VFD) was used to control the fan frequency, and therefore the air velocity, in the test section. This fan is rated at 40,000 CFM, which translates to a maximum achievable speed of 102.9 knots (52.9 m/s) in the test section, meeting the 100-knot requirement for this experiment. Since the fan is 47 inches in diameter, a long transition section was built to keep the flow attached between the test section and the fan as shown in Figure 19. In order to rest the 1/50th-scale 80x120 inlet on the floor of the NFAC 80x120 turntable, the fan had to be lowered slightly beneath the floor of the NFAC test section. Interference of the fan with hardware below the turntable necessitated the 1/50th-scale inlet be placed 4.78 feet ahead of the turntable center as in prior testing.



Figure 18. Chicago Blower Co. D/47 vane axial fan attached to rear of 1/50th-scale model.

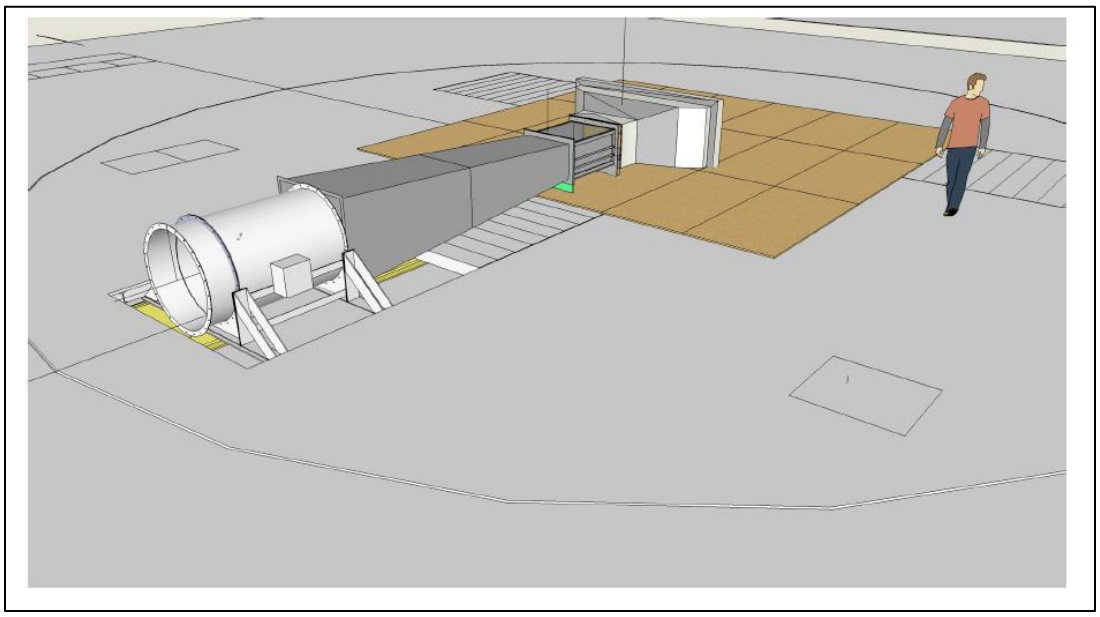


Figure 19. 1/50th-scale 80x120 leg in full-scale 80x120 test section.

1/50th-Scale 80x120 Test Section Survey Apparatus

Several changes to the test section survey apparatus from Google 1.0 Phase II testing were made before the start of this study. The most significant change was the elimination of the five holes in the ceiling of the test section that defined the lateral locations that were available for prior Cobra probe velocity measurements. The original five holes were modified into a single lateral slot in the ceiling, thereby providing complete lateral freedom for velocity survey measurements. The ceiling is composed of 1/2-inch-thick acrylic. A second piece of 1/2-inch-thick acrylic, significantly wider than the test section ceiling with a single circular hole slightly wider than the Cobra probe support, is free to slide on top of the test section ceiling, sealing the slot apart from the location of the single circular hole provided for the Cobra probe. The two acrylic plates were lubricated with Mclube Sailkote high-performance dry lubricant to minimize friction between them. A pair of 80/20 aluminum beams were mounted to the test section ceiling to prevent ceiling deflection and used to loosely guide the upper acrylic plate as the Cobra probe moved sideways. The original stepper motors were replaced by servo motors having increased torque. The diagonal cross brace on the back of the vertical 80/20 beam kept the vertical axis rigid and, by mounting this symmetrically to the bottom support, removed any stiction in lateral motion, enabling left and right motion to be equally smooth (Fig. 20(a)).

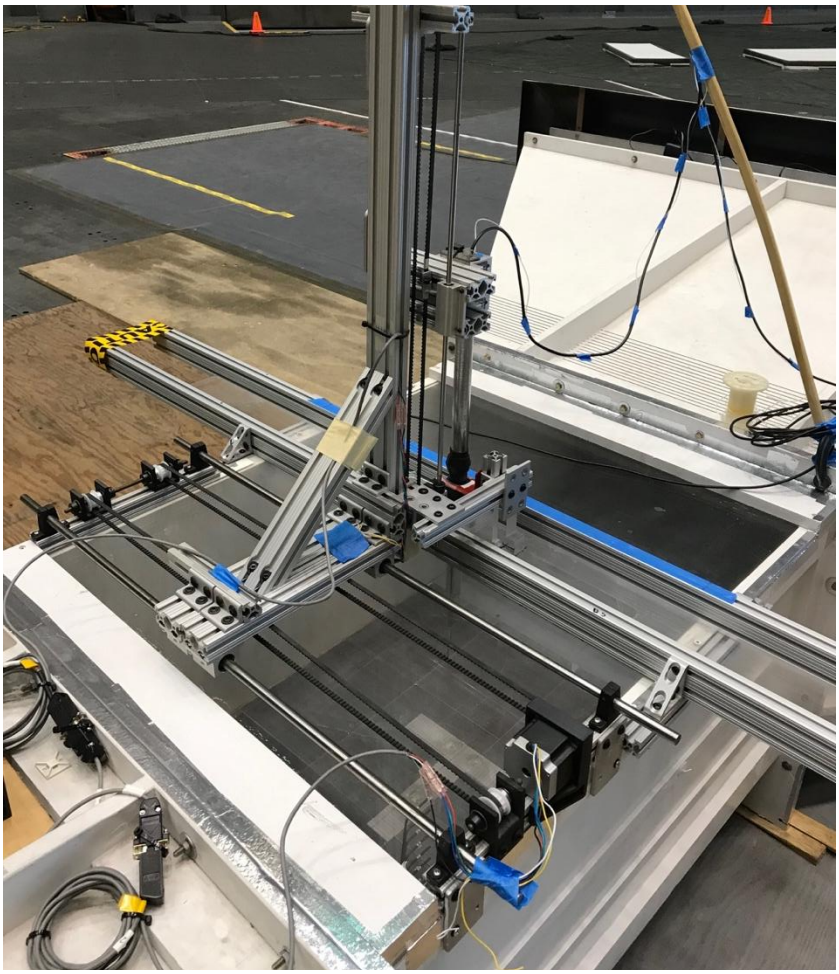


Fig. 20(a). 1/50th-scale 80x120 test section survey apparatus; view looking upstream.

The frontal view of the survey apparatus is shown in Figure 20(b), and Figure 20(c) shows a close-up view of the rubber seal. When the Cobra probe is raised, the probe support moves upwards dragging the close-fitting rubber seal with it. This creates a leak around the probe support where it passes through the oversize hole in the top acrylic plate. The red fork prevents the seal from moving upwards more than 1/16th of an inch or so. When the Cobra probe is lowered, the probe support forces the rubber seal into contact with the acrylic plates stacked on top of the test section ceiling, sealing the prior leak. This describes the standard operational procedure used in making a Cobra probe test section velocity measurement, i.e., always approach a Cobra probe measurement location by lowering the probe into the desired position. This ensures a leak-free measurement.

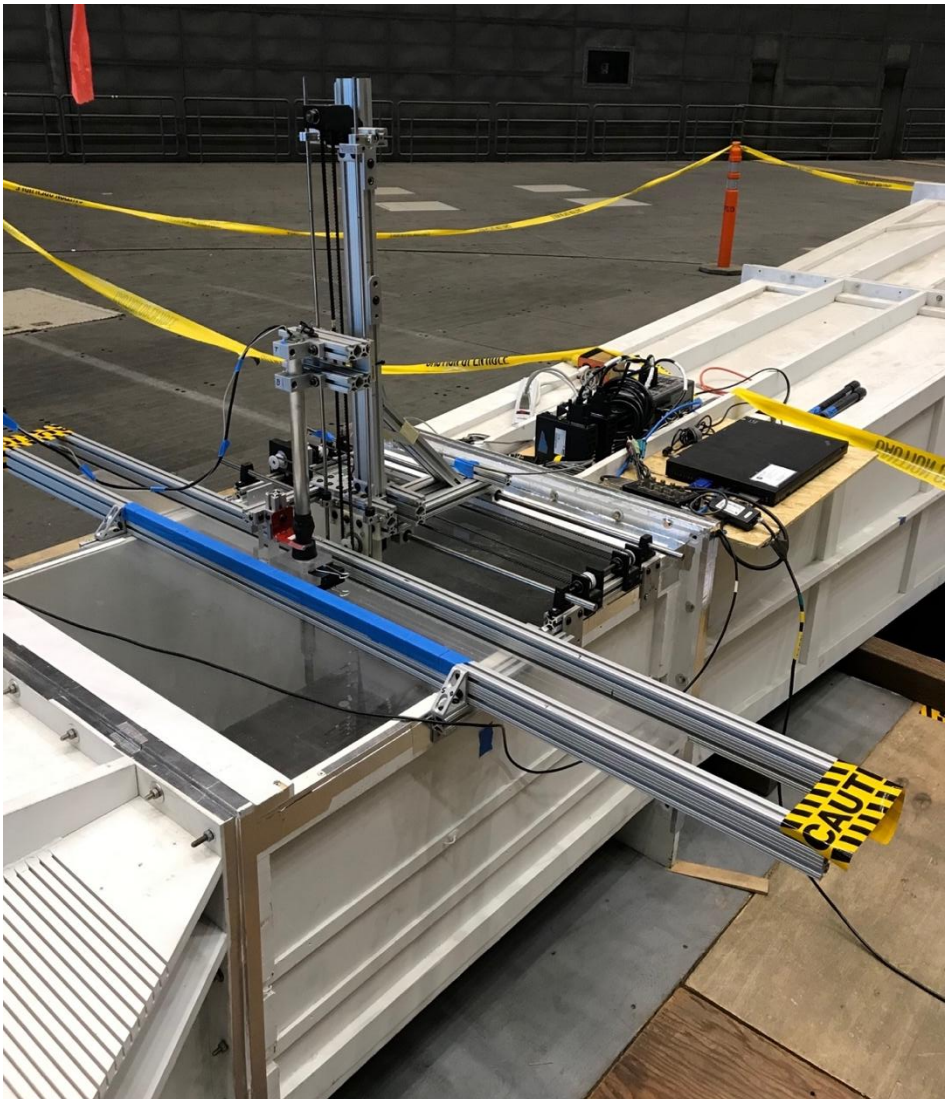


Fig. 20(b). 1/50th-scale 80x120 test section survey apparatus; view looking downstream.

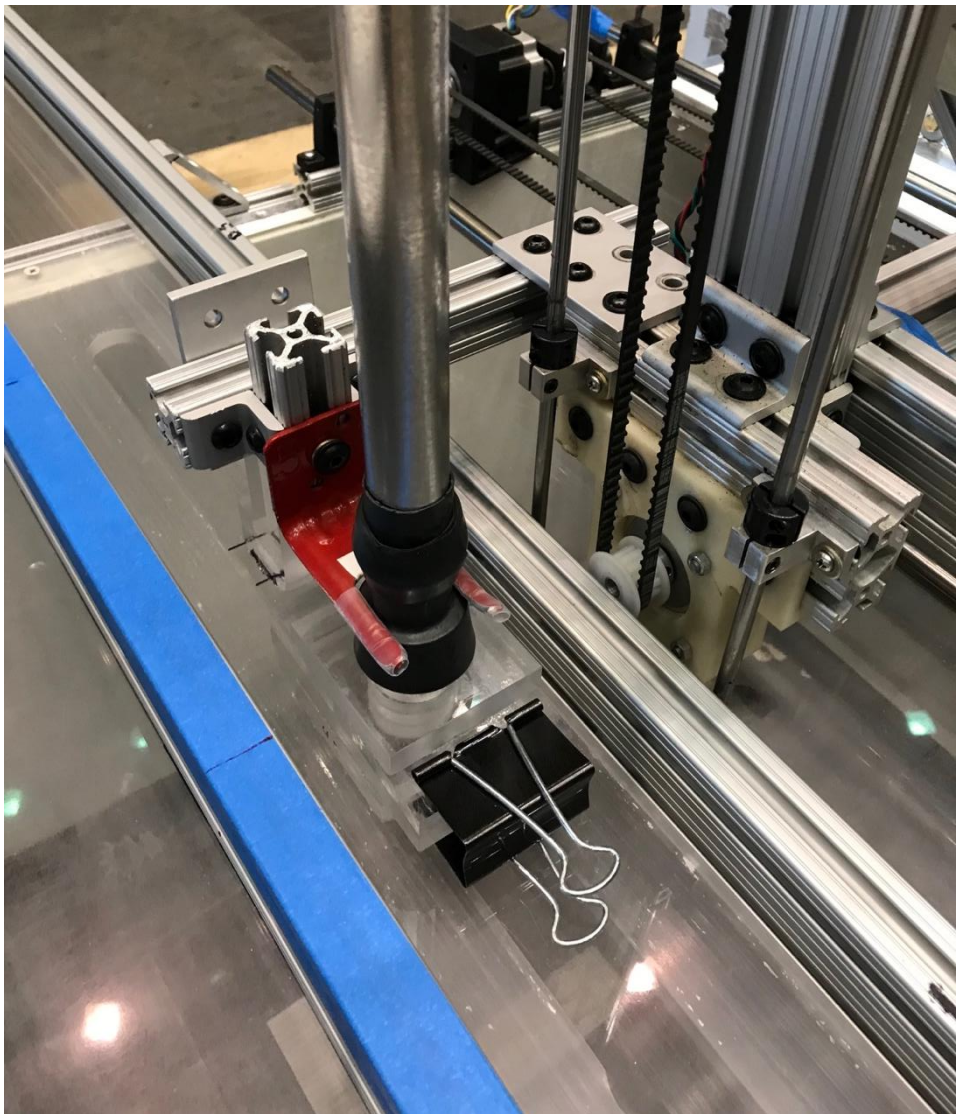


Fig. 20(c). 1/50th-scale 80x120 test section survey apparatus; close-up of rubber seal.

Figure 20. Test section survey apparatus.

The survey apparatus was extensively tested with the Cobra probe and probe support installed. Tests were first performed with the test section velocity at zero, then at maximum air speed, for the full area survey. Multiple repeat runs were performed to see if there were any problems with the two acrylic plates that must slide over each other with as little friction as possible. No deterioration of the probe motion was noted with increasing time. The fully automated survey motion was a great improvement over the prior incarnation that required human operator intervention to change the lateral probe location by unplugging the next hole and re-plugging the last hole. This improvement in data acquisition efficiency prompted the use of an improved 5x5 data point grid from the previous 5x3 grid. The Cobra data point grid is shown in Figure 21.

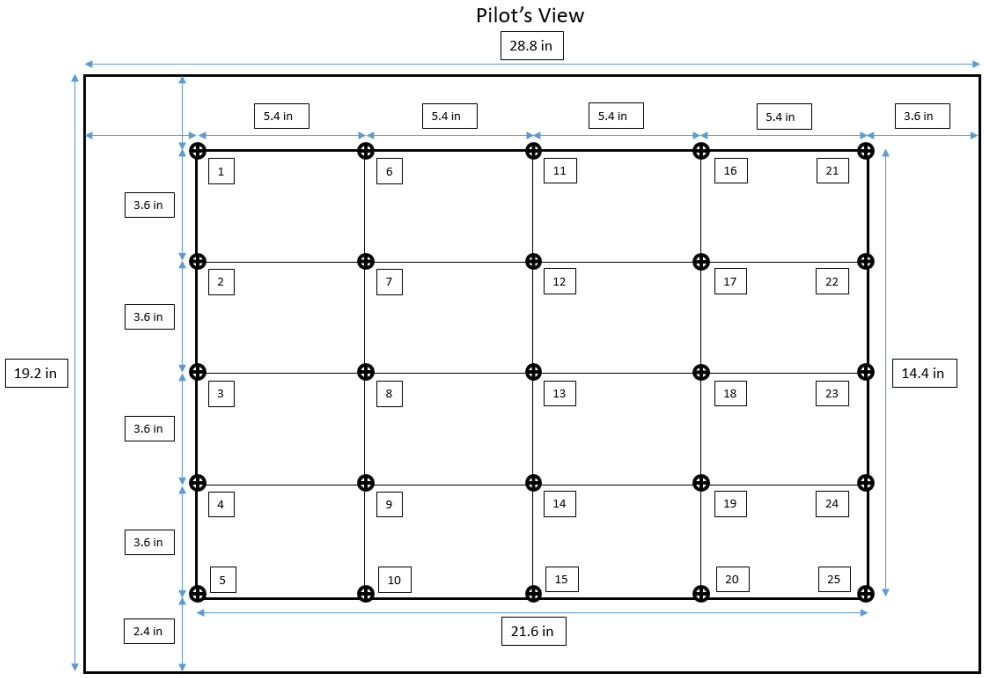


Figure 21. Cobra probe survey locations in model test section (25 grid point survey, pilot view).

Series 100 Cobra Probe

The Series 100 Cobra probe is a multi-hole pressure probe that provides dynamic, three-component velocity measurements in real time. It can measure flow angles in a ±45-degree cone with "typical" accuracy ±0.3 m/s in velocity and ±1 degree in flow angle "at most flow angles." The Cobra probe incorporates four 0.5 mm pressure taps in a multi-faceted head, with the pressure taps connected via tubing to dynamic pressure transducers located in the body of the probe. The frequency response of the probe is linearized to greater than 2 kHz. Ratios of the tap pressures are then related to the instantaneous velocity vector and static pressure at the probe head via calibration tables.

A single Cobra probe (Probe ID 188, with a full-scale velocity range of 100 m/s) was used to acquire velocity measurements in the test section of the 1/50th-scale 80x120 wind tunnel. The probe is capable of providing velocity components in three orthogonal directions (Fig. 22) for velocities between 2 and 100 m/s with a resolution of 0.1 m/s. Velocities below 2 m/s are inhibited from display and not recorded. This is the same probe used in Google 1.0 Phase II testing.

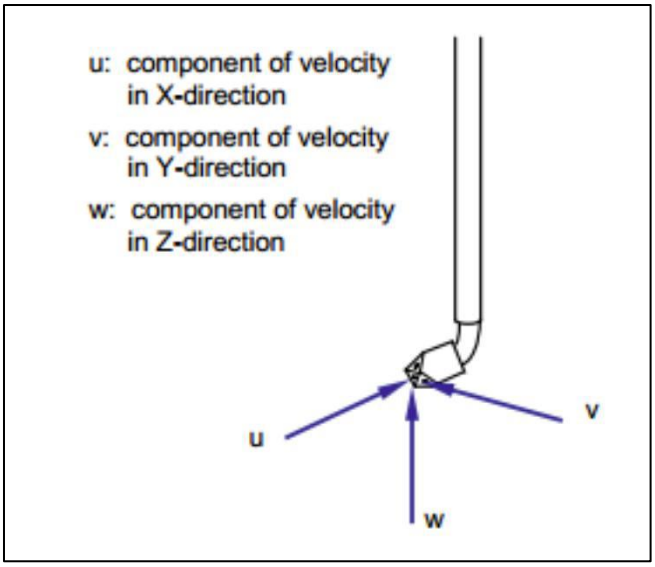


Figure 22. Cobra probe axis definition.

The computer laptop responsible for data acquisition was again positioned immediately adjacent to the test section to minimize cable length between the probe and data acquisition system, as recommended by the manufacturer. However, for Google 2.0 testing, a keyboard-video-mouse (KVM) extender was installed to allow the operator remote control of the survey apparatus from the model prep area outside the NFAC 80x120 test section (to minimize any aerodynamic interference from having the human operator adjacent to the test section or inlet). All Cobra probe data were written to disk at 1,250 Hz over a duration of slightly longer than 30 seconds. Time history files were stored plus all average velocities *U*, *V*, and *W*, and relative turbulence intensities *Iuu*, *Ivv*, *Iww*, and *Iuvw* (see Nomenclature for definitions). Note that the turbulence intensities are normalized with the LOCAL mean flow speed, not the test section centerline velocity.

Upwind Buildings

All three-dimensional (3D) buildings of interest in the current study have sharp edges. Sharp edges necessarily fix boundary layer separation points making the drag coefficient independent of Reynolds Number. This is true for the NASA Ames buildings and the MVC buildings. The Google Campus buildings were represented as extended-frontal-area 2D silhouettes, also with sharp edges (see next section). This justifies testing buildings at 1/50th scale while matching full-scale velocities (both inside the 1/50th-scale 80x120 test section and the ambient wind ahead of the 1/50th-scale 80x120 inlet) despite a factor of 50 between the Reynolds Numbers at full scale and model scale. Multiple 1/50th-scale models were constructed.

1. Pre-2019 buildings

This describes buildings west of the NASA Ames boundary in the city of Mountain View, plus NASA Ames buildings (N-258 and trailers T35A-C). The MVC buildings and NASA Ames buildings each have vertical walls and a horizontal roof and therefore are easily constructed from 1/2-inch-thick foam-core poster board and 300-mph wind tunnel tape. These buildings were fully modeled in three dimensions.

2. Google Campus buildings

The Google Campus consists of three buildings, each having a square footprint. The Google Campus buildings were deemed too complex to be easily constructed in three dimensions. Instead, silhouettes were constructed for each building when viewed in a direction parallel to the line joining the center of the inlet to the center of building G1. Each silhouette therefore represents the cross-sectional area of each building presented to a wind from the center of G1 to the center of the inlet (total extended frontal area exposed directly to the wind when the wind direction is aligned from center of building G1 to the center of the inlet, yaw = –29 degrees). Silhouettes were created from 3/4-inch plywood sheets cut on a computer numerical control (CNC) machine to preserve the silhouette accuracy available from the computer-aided design (CAD) model of the Google Campus.

Table 1 provides important Google Campus building dimensions. The Google Campus buildings are very large compared to the NFAC 80x120 inlet. The width of building G1 is 2.4 times the width of the 80x120 inlet, and the width of building G2 is approximately 1.8 times the width of the 80x120 inlet. Even the smallest building, G3, is almost 0.9 times the inlet width. Buildings G1 and G2 are both taller than the NFAC 80x120 inlet. The relative height of each building is illustrated in the silhouette sketches shown in Figure 23 that correspond to a view of the Google Campus from the midpoint of the inlet.

Figure 24(a) shows a photograph of the test configuration corresponding to ambient wind parallel to the inlet centerline (turntable yaw angle = 0 degrees) with the MVC on the right, and the Google Campus in the foreground with NASA Ames buildings lying between the Googleplex and the 80x120 inlet. Figure 24(b) shows the corresponding plan view created from the CAD drawing.

Table 1. Important Building Dimensions.

Google Campus Dimensions (From Preliminary CAD Model of Reference 4)		
Google Building	**Full-Scale Width**	**1/50th Scale**
G1	865.74 ft	207.778 in. = 17.31 ft
G2	657.24 ft	157.737 in. = 13.14 ft
G3	323.88 ft	77.732 in. = 6.48 ft
80- by 120-Foot Wind Tunnel Dimensions NFAC 80x120 inlet is 132.5 feet high x 362 feet wide 1/50th-scale 80x120 inlet is 2.65 feet high x 7.24 feet wide		

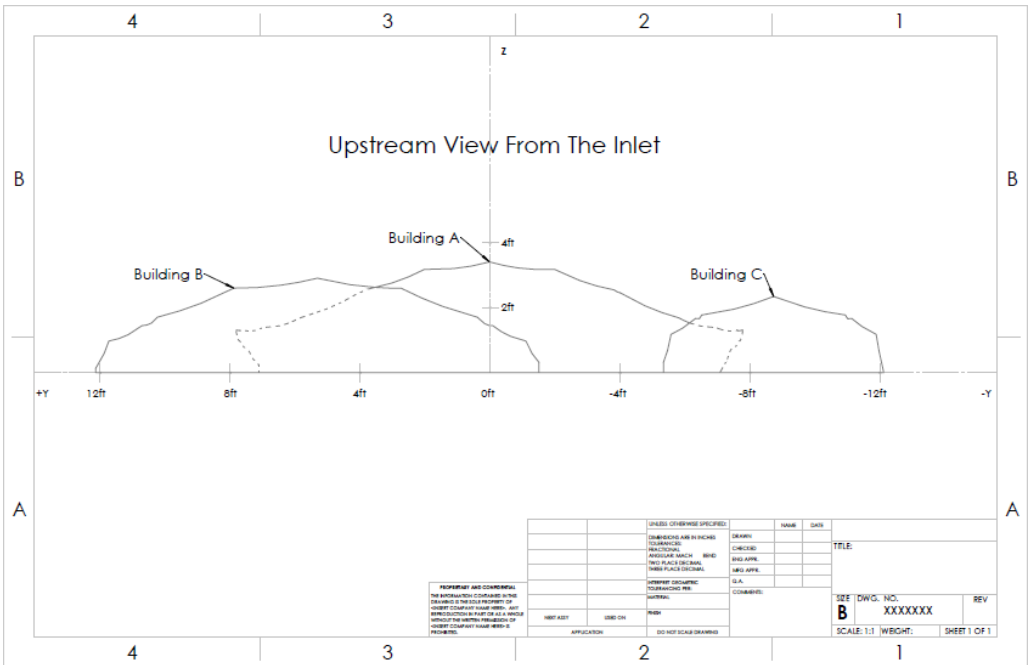


Figure 23. Silhouettes A, B, and C representing Google buildings G1, G2, and G3.

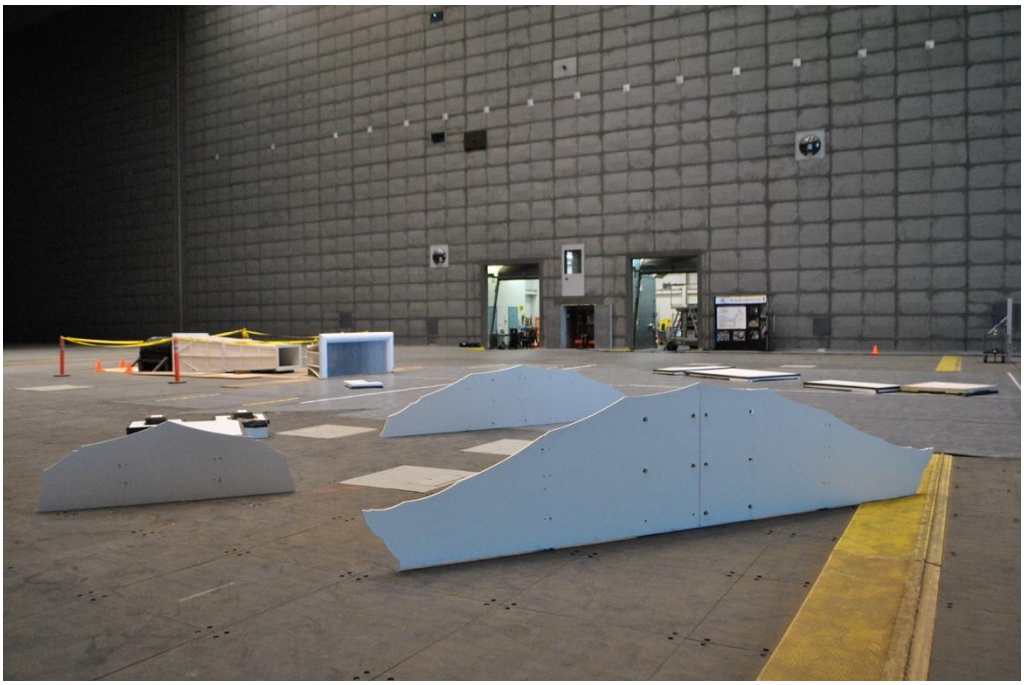


Fig. 24(a). “Pre-2019 buildings” + “Google Campus buildings” ahead of inlet: Ψ = 0 deg.

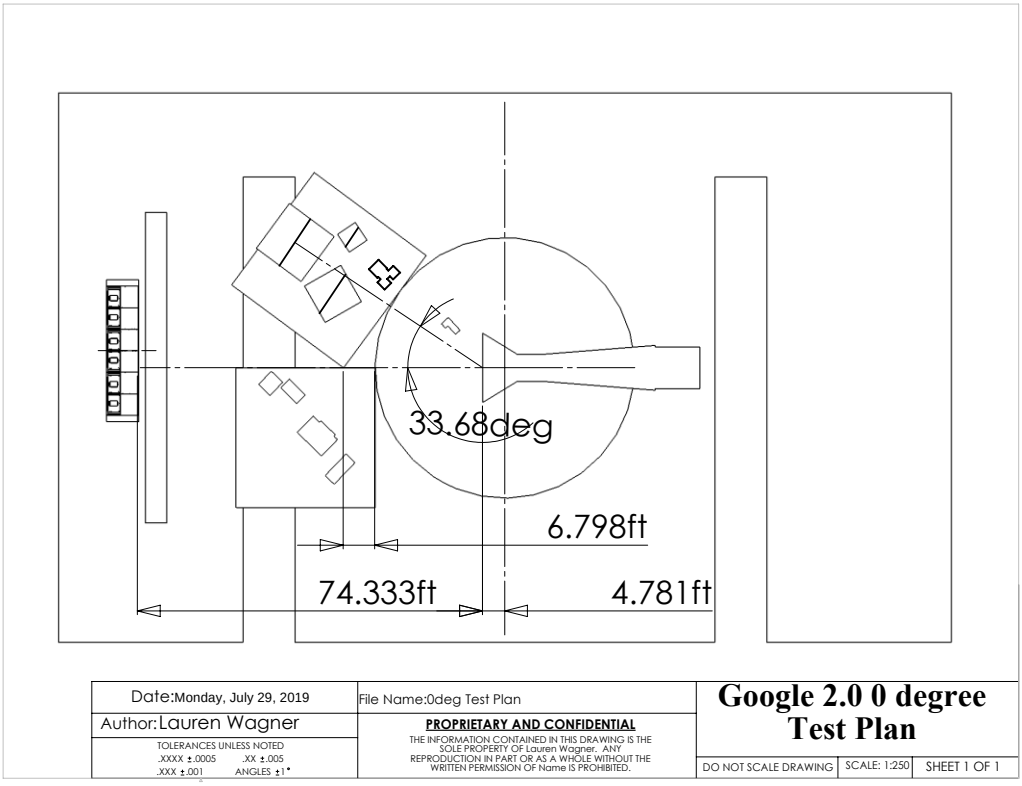


Fig. 24(b). Corresponding CAD building installation sketch; yaw angle $\Psi = 0$ deg.

Figure 24. Test configuration.

Figures 25(a) through 25(c) show installation sketches that place the Google Campus buildings upwind from the inlet, and Figure 26 shows the same for the MVC.

The silhouettes for Google buildings G1, G2, and G3 were created for one particular wind direction—specifically a wind direction parallel to the line joining the center of building G1 to the center of the inlet. Although the silhouettes were not created for testing at other wind directions, simulation with the existing silhouettes should still be acceptable for small changes in wind direction. The installation of the six blowers to generate the simulated external atmospheric wind precluded relocation of the fans in the test section. Therefore, to align the *measured* wind direction with the line joining the center of building G1 to the center of the inlet, the turntable was rotated 29 degrees toward the west wall of the test section. This also required relocation of the external buildings to maintain correct orientation relative to the inlet.

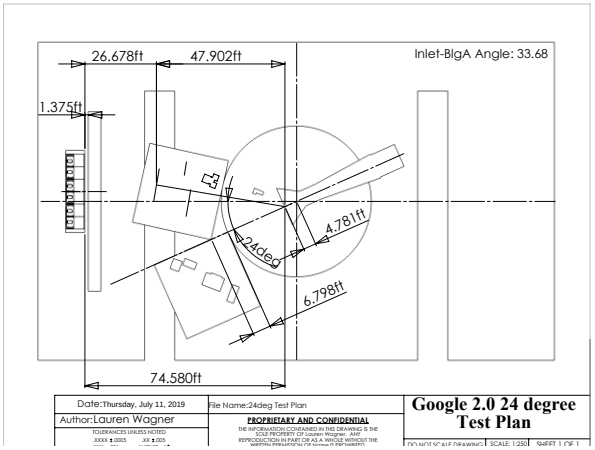


Figure 25(a). Yaw angle $\Psi = -24$ deg.

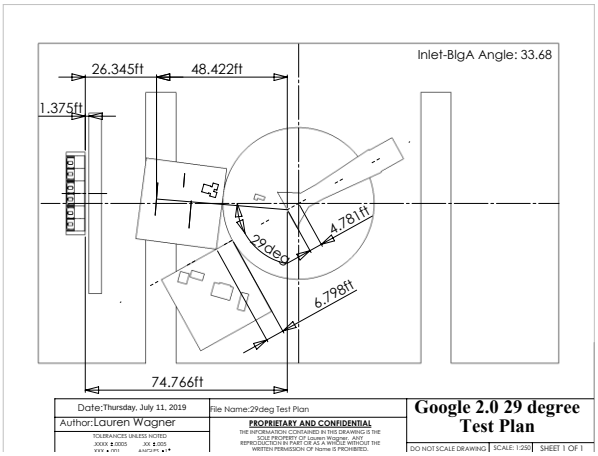


Figure 25(b). Yaw angle $\Psi = -29$ deg.

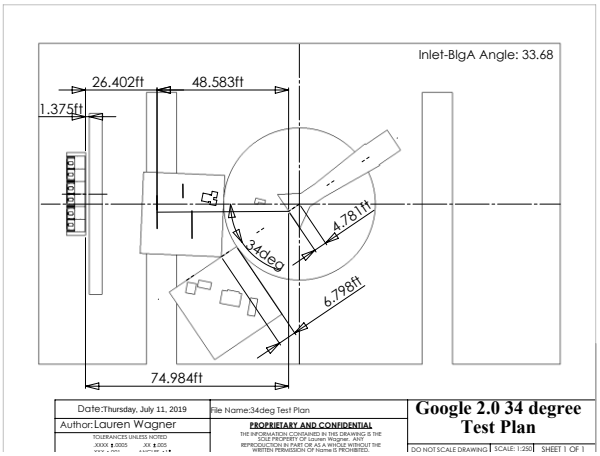


Figure 25(c). Yaw angle $\Psi = -34$ deg.

Figure 25. Simulation of ambient wind direction from Google Campus towards 80x120 inlet.

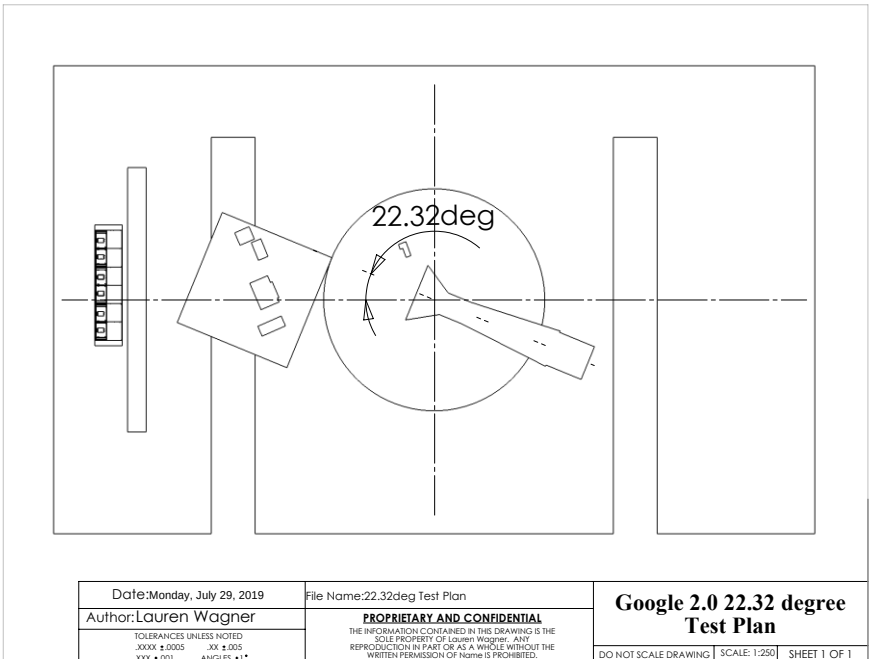


Figure 26. Simulation of ambient wind direction from center of MVC towards 80x120 inlet (yaw angle Ψ = 22.32 deg).

3. 2D and 3D blockage

Each building block has a 1-foot by 1-foot cross section and is 16 feet long. Units were lined up end-to-end to increase building length to 32 feet or stacked to increase building height up to 4 feet. Buildings were placed directly in front of the inlet, either symmetrically about the wind tunnel centerline, or offset laterally with the building end placed on the tunnel centerline as illustrated in Figure 27.

4. Inlet spires

Triangular cardboard cutouts were attached to the front face of the 1/50th-scale inlet in an attempt to provide both a vertical gradient in velocity and an increased turbulence level in the test section, in planning for future wind turbine testing. Two sizes of spire were tested—both tall and short as shown in Figure 28.



Side view of installation.

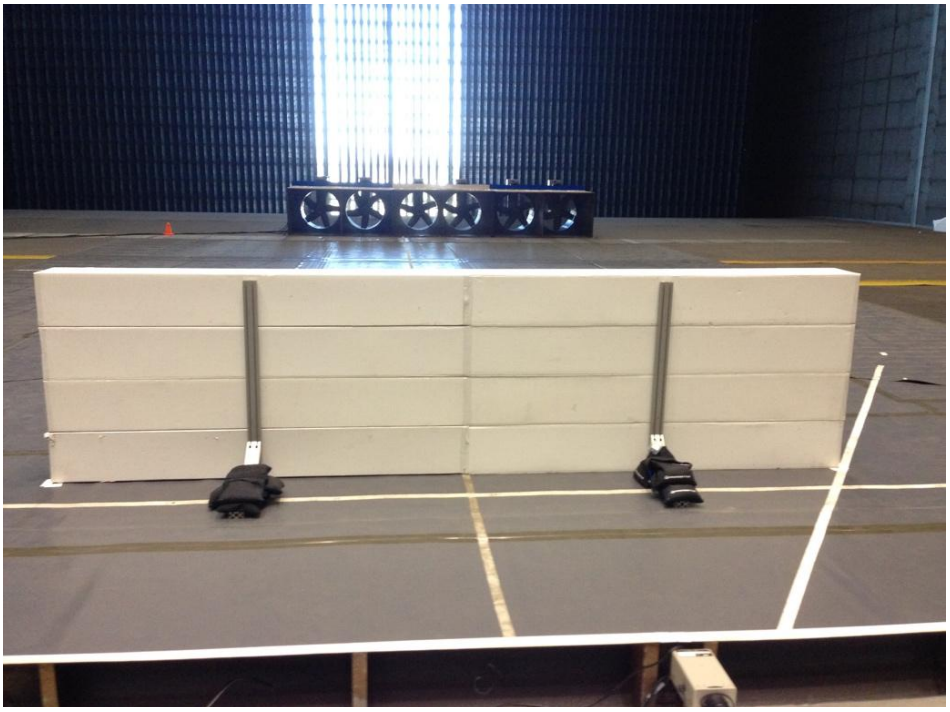


Rear view of installation.

Fig. 27(a). 1 ft x 16 ft x 2 ft 2D blockage 12 ft ahead of inlet (Run 139).

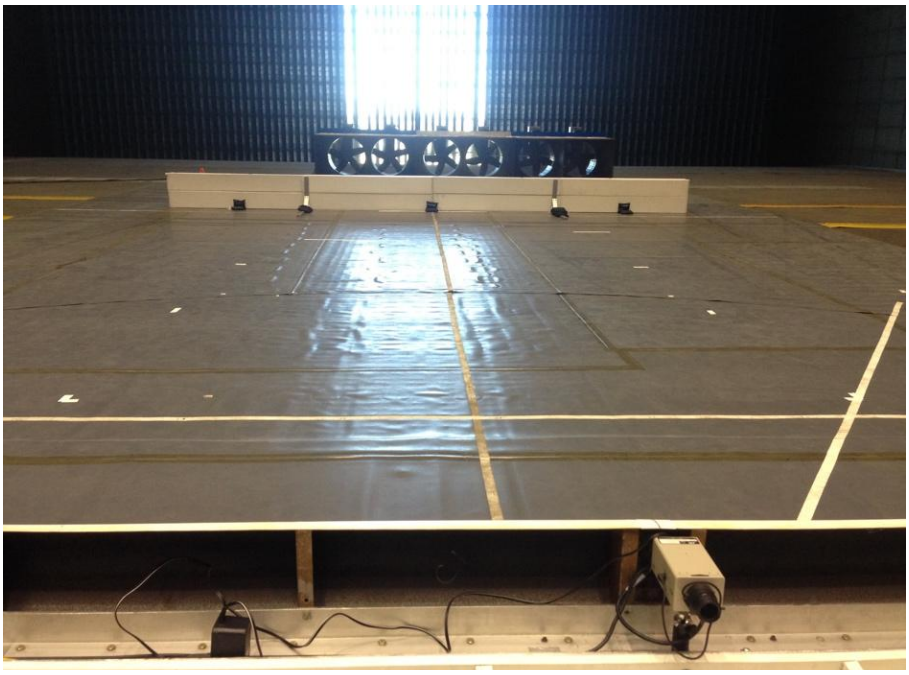


Side view of installation.

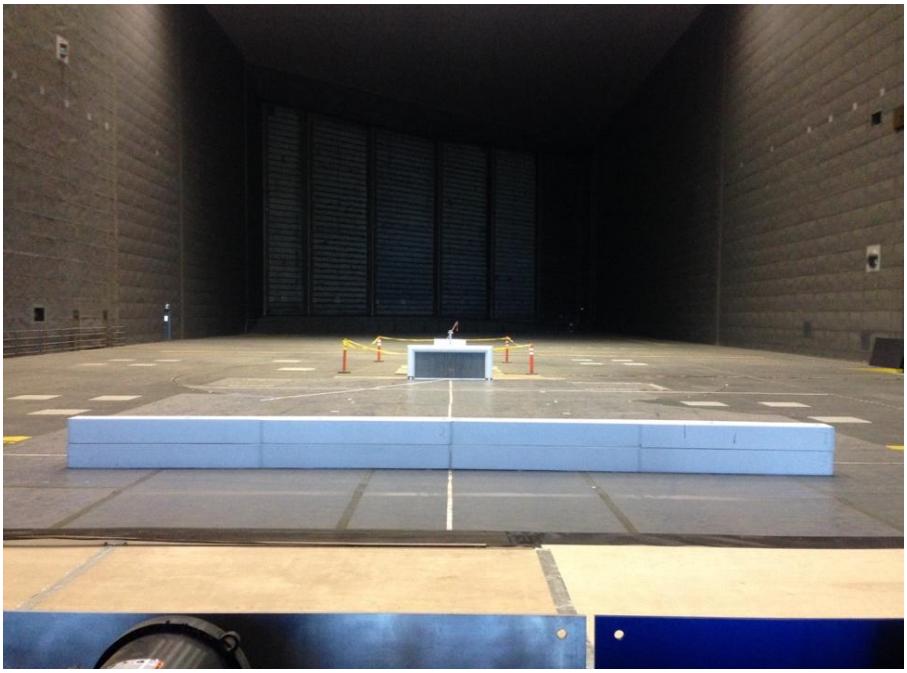


Rear view of installation.

Fig. 27(b). 1 ft x 16 ft x 4 ft 2D blockage 12 ft ahead of inlet (Run 140).



Rear view of installation.

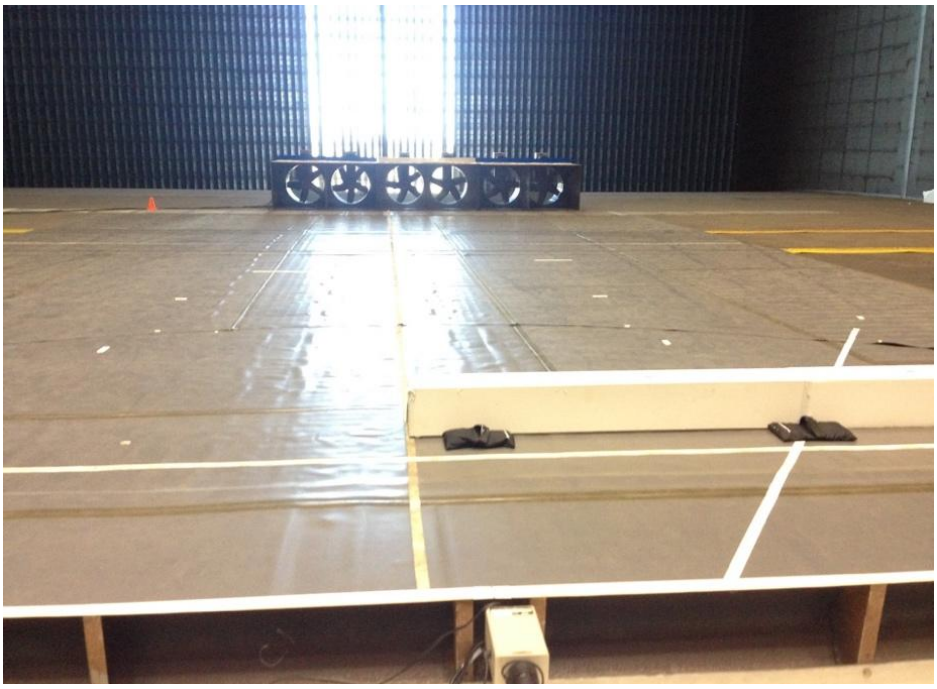


Front view of installation.

Fig. 27(c). 1 ft x 32 ft x 2 ft 2D blockage 48 ft ahead of inlet (Run 151).



Front view of installation.



Rear view of installation.

Fig. 27(d). 1 ft x 16 ft x 1 ft 3D blockage 12 ft ahead of inlet (Run 160).



Front view of installation.

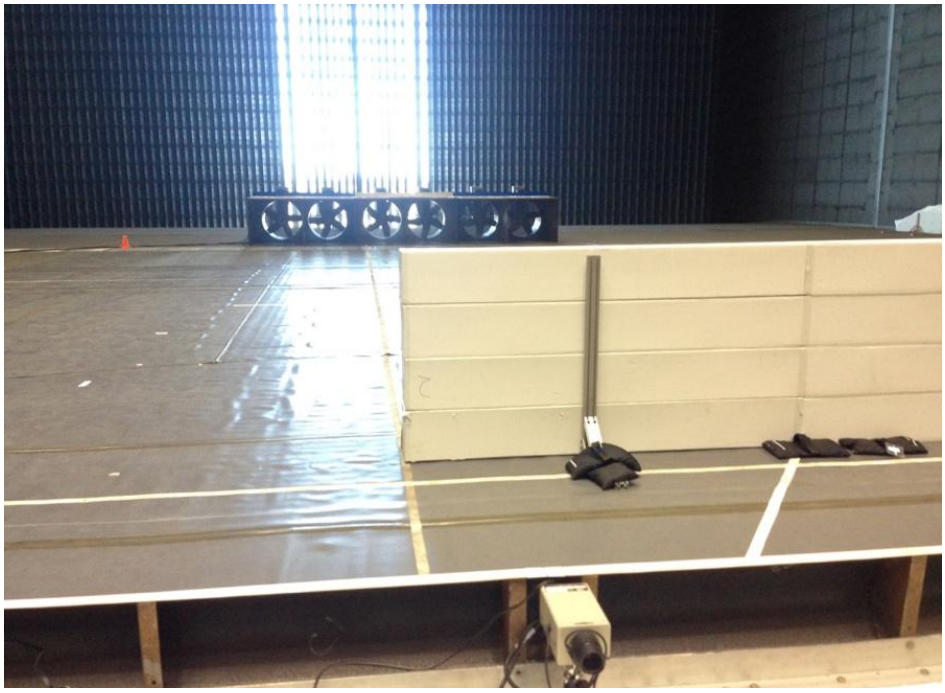


Rear view of installation.

Fig. 27(e). 1 ft x 16 ft x 2 ft 3D blockage 12 ft ahead of inlet (Run 162).



Front view of installation.



Rear view of installation.

Fig. 27(f). 1 ft x 16 ft x 4 ft 3D blockage 12 ft ahead of inlet (Run 163).

Figure 27. Building placement.

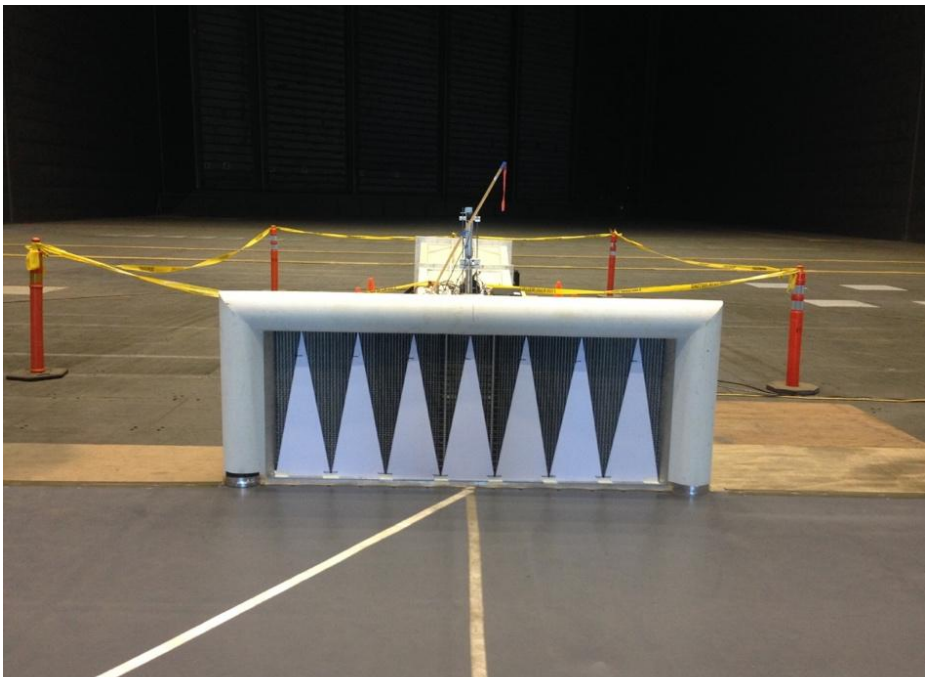


Fig. 28(a). Tall spires at inlet (Runs 122–125).

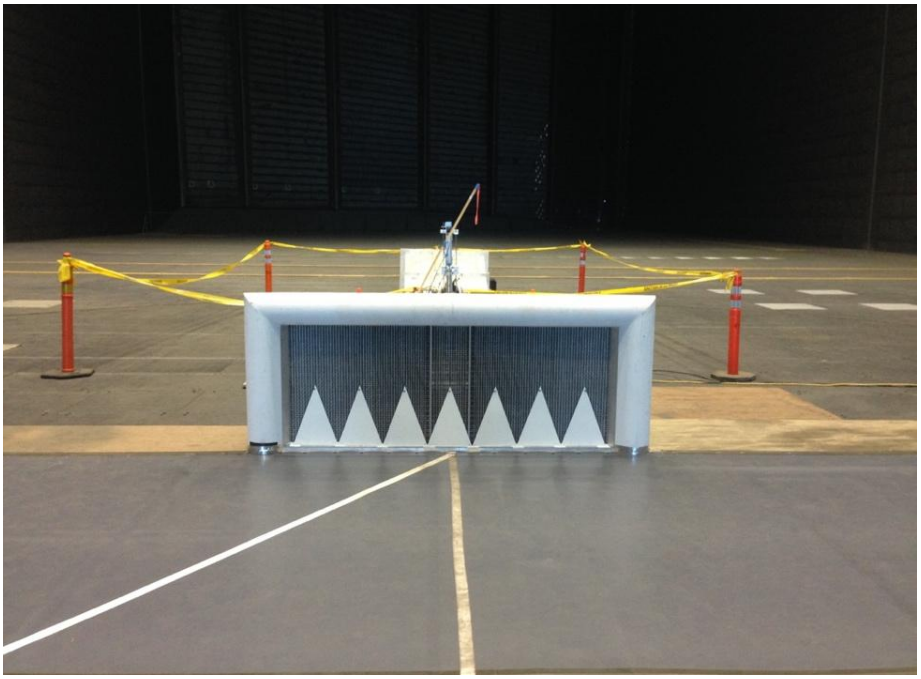


Fig. 28(b). Short spires at inlet (Runs 126–129).

Figure 28. Installation photographs of spires on front face of inlet.

Ambient Wind Generation

Four 42-inch-diameter blowers were available as part of a 2-m by 2-m wind tunnel design under construction for another research program. Each blower is a Dayton 42-inch-diameter 10-HP tube-axial fan (Model 166210A) providing 33,000 CFM. It was rapidly determined that a total of six such blowers would be required to perform "WIND ON" Google 2.0 testing, in order to comfortably exceed the width of the Google Campus. The approach would not be ideal, since the ambient wind would be a low-aspect-ratio wall jet with wind speed decreasing with increasing downwind distance from the blower exit plane, i.e., with approach to the downwind buildings and 80x120 inlet.

A "risk-reduction" two-blower-assembly study was warranted before the purchase of an additional two blowers was authorized. The CAD model of a two-blower assembly used in the risk-reduction study is shown in Figure 29(a) without the high-loss exit screen in order to show interior features. Figure 29(b) shows the high-loss exit screen added to improve exit flow uniformity, and Figure 29(c) shows the inlet face plate with chicken wire for added safety. During the risk reduction study of a single two-blower assembly it was determined that a 5-minute measurement was adequate to provide satisfactory repeatability in the mean ambient wind velocity measurement provided by the Alnor probe. Risk reduction measurements are not included in the current report, however. One important finding provided by the risk reduction test was that the flow from the two-blower assembly was slightly skewed to the right (looking downstream) as the jet flowed towards the 1/50th-scale 80x120 inlet.

The decision was made to proceed with plans to use a six-blower array. The six-blower array was displaced 42 inches off-axis (towards the east wall) in order for the center of the jet to meet the 1/50th-scale 80x120 inlet on center.

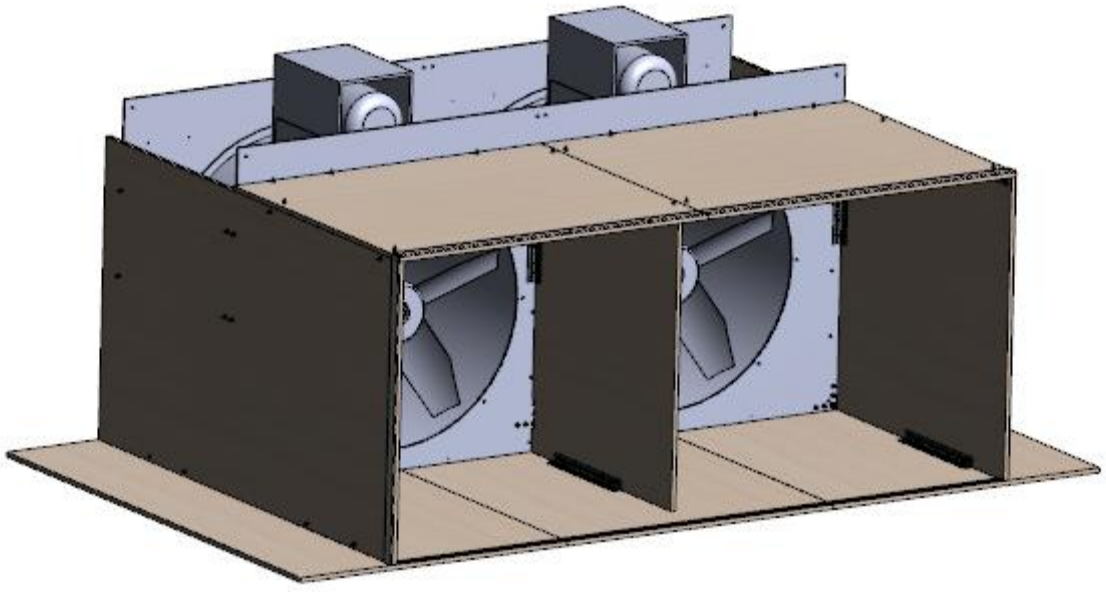


Fig. 29(a). CAD model of two-blower assembly (without exit screen).



Fig. 29(b). Two-blower assembly installed in NFAC test section, exit screen in place.



Fig. 29(c). Two-blower assembly showing two-blower intake.

Figure 29. Two-blower assembly.

The geographic location of the Google Campus relative to the NFAC 80x120 inlet, defined by the architects' preliminary CAD model, was used to place the Google Campus buildings in the 1/50th-scale simulation. The six-blower assembly was required to be placed upstream of this location in order to simulate ambient wind. Location of the six-blower assembly had to be made quite early in the test, before the decision to use 2D silhouettes to simulate the Google Campus had been made. Three-dimensional buildings require a greater streamwise separation between the six-blower array and the front face of Google building G1 than a silhouette placed midpoint at the respective building. This necessarily placed the blowers outside the crane tracks and presented a problem for blower installation in the NFAC test section. Individual two-blower sub-assemblies, or the six-blower linear array, could not be assembled at some arbitrary position and lifted into place later using the crane. The acoustic lining on the floor of the NFAC test section is easily damaged, requiring the six-blower assembly to be built "in place."

Maximum flow rate from the six-blower array was obtained for the VFD frequency of 48.0 Hz. Attempts to increase the power supply frequency above 48.0 Hz caused the power supply to trip. The VFD was therefore configured with a hard stop at 48.0 Hz in order to be able to simply turn on the power supply and provide maximum ambient wind in a repeatable manner without any possibility of tripping the power supply. The ability to select other blower frequencies and provide predictable ambient wind speeds below the maximum ambient wind speed condition was also required. The Alnor probe was therefore placed at X = 61.3 feet, Y = 0 feet, and Z = 2 feet, and the local ambient wind speed noted for a VFD frequency of 48.0 Hz (Fig. 32(b) for ambient wind distribution). The VFD frequency was then slowly reduced until a wind speed of one-half of the prior measurement was achieved at 26.02 Hz (Run 27). Using linear interpolation both above and below the 50-percent maximum ambient wind condition, Table 2 was created to allow the establishment of any desired ambient wind speed simply by selecting the VFD power supply frequency.

Table 2. Power Supply Frequency to Provide Desired V_{wind}.

V_{wind} (% $V_{max\text{-}wind}$)	Power Supply Frequency (Hz)
0.0	0
12.5	6.50
25.0	13.01
37.5	19.51
50.0	26.02
62.5	31.51
75.0	37.01
87.5	42.50
100.0	48.0

Alnor Probe Measurements of Ambient Wind Speed

All measurements of ambient wind speed were made with the 1/50th-scale 80x120 wind tunnel installed in the NFAC 80x120 test section, but not operating. Detailed ambient wind speed measurements were acquired using an Alnor Model No. AVM440-A probe (Serial No. AVM441318004). This is a portable, hand-held probe with a velocity range of 0 to 6000 fpm (100 fps) and a fixed sample rate of 1 Hz. Velocity resolution is quoted at 1 fpm and accuracy is ±3 percent of reading or ±3 fpm, whichever is greater. The Alnor probe can be used as a real-time display of air speed and also as a data logger courtesy of onboard storage. Measurement is limited to "air speed" and individual velocity components are not available. The sole goal of the Alnor probe measurements of ambient velocity was to estimate a mean wind speed at the location of building G1 and ahead of the inlet.

The sensor appears to resemble a hardened hot wire or hot film, without the frequency response of a hot wire or hot film. As such, it is assumed to be less sensitive to the velocity component parallel to the sensor filament. Horizontal fluctuations in ambient wind are parallel to the ground (in the streamwise and lateral directions) and are therefore unrestricted. Vertical fluctuations in ambient wind are restricted by the presence of the ground and are therefore expected to be the least significant of the three components. The Alnor probe was therefore always mounted with the probe body vertical in order to provide the best estimate of local airspeed.

TEST PROCEDURES

Turntable rotation was employed to simulate change in wind direction relative to the 1/50th-scale 80x120 inlet. All turntable yaw angles were approached by rotating the turntable in the positive direction, clockwise when viewed from above, to avoid hysteresis in the turntable drive. The test section floor was covered with a heavy-duty vinyl sheet to reduce the boundary layer growth, with the additional benefit of protecting the acoustic lining. Buildings were placed on top of tarpaulins and their locations marked so that they could be readily relocated. Building position and orientation relative to the model-scale inlet were maintained as the turntable was rotated by simply repositioning the tarpaulins. Tarpaulin edges were taped to the vinyl floor-covering to prevent flapping with the six-blower assembly operational. Occasionally, partial sheets of plywood were placed on top of the tarpaulins to eliminate ripples in the tarpaulins from disturbing the flow.

Alnor Surveys of Ambient Wind Speed Ahead of Inlet

During the risk reduction study of a single two-blower assembly it was determined that a 5-minute measurement was adequate to provide satisfactory repeatability in the mean velocity measurement. Six-blower tests used the same 5-minute duration for all Alnor measurements of ambient wind. Experience shows that 100 samples are needed for an adequate description of the average velocity. A 5-minute sample duration with a 1-Hz data rate provides 300 samples, satisfying the 100-sample requirement for a repeatable measurement of mean velocity. The Alnor probe was not intended to provide turbulence measurements in the simulated atmospheric wind. Experience shows that an absolute *minimum* of 1,000 samples are required to obtain repeatable estimates of standard deviation. For the fixed sample rate of 1 Hz available from the

Alnor probe, each data point would then require a minimum of 17 minutes, making the duration of each lateral survey unacceptably long.

To improve efficiency, reliability, and repeatability of probe location during Alnor probe surveys of ambient wind speed, the Alnor probe was mounted on a cart with pneumatic tires as illustrated in the CAD sketch shown in Figure 30(a). The pneumatic tires were deemed a requirement to protect the acoustic lining of the NFAC test section. The Alnor probe was mounted at the end of a long horizontal beam in order to locate the probe a reasonable distance from the cart to minimize measurement interference from the cart. This horizontal beam was mass balanced to minimize beam deflection under self-weight, and the Alnor probe was suspended vertically below the beam to reach as close to the ground as desired. The aerodynamic disturbance from this horizontal beam was minimized by employing a half-round leading edge. A vertical 80/20 aluminum extrusion with associated linear bearing provided vertical adjustment of the probe position with simple handles to lock the bearing in place. Position of the linear bearing on the vertical beam was marked at desired probe heights above the ground to expedite probe height adjustment. The vertical beam was bolted to both the upper and lower trays of the cart. Cross-bracing of the vertical beam was provided by angled beams bolted to the top of the cart. Figure 30(a) shows the Alnor probe suspended close to the floor, and Figure 30(b) shows the "as-built" cart with the Alnor probe at the top of the vertical slide. The lower tray also shows weights added to compensate for cart tilting due to the weight of the aluminum extrusions.

Figure 30(b) shows multiple applications of adhesive-backed white tape on the floor of the test section (atop the vinyl floor covering). Tape lines were applied with the help of a laser leveler shown in Figure 31. A steel pointer is shown suspended from the rear of the bottom tray of the cart in Figure 30(b). The pointer is centered on the white tape that defines the desired cart path. An initial mark was placed at the location of the steel pointer with the probe at $Y = 0$. Additional marks were placed every 3 feet on either side of this mark covering $-15 \text{ feet} < Y < +15 \text{ feet}$.

The Alnor probe was used to define the ambient wind speed ahead of the 1/50th-scale 80x120 inlet with the model wind tunnel installed but nonoperational and the turntable at yaw = 0 degrees. Lateral surveys of ambient wind speed at constant height above the test section floor each cover a span of 30 feet. Lateral spacing between velocity measurements was selected to be 3 feet. A typical lateral survey at constant height therefore required a minimum of 11 measurement locations. Including both ZERO points and HOUSE-KEEPING points (all with the same duration of 5 minutes) this typically amounted to 17 measurements in each lateral survey. This corresponds to 2 hours for each lateral survey and accounts for the ZERO and HOUSE-KEEPING repeat points acquired before, after, and during each lateral survey, to monitor recirculation and repeatability of test conditions throughout each run. Each ZERO point corresponds to the measurement of ambient wind at $Y = 0$, $Z = 2$ with BLOWERS OFF. Each HOUSE-KEEPING point corresponds to a repeated test condition with BLOWERS ON at $Y = 0$ and Z at the particular height of the individual lateral survey.



Fig. 30(a). CAD model of Alnor probe cart.



Fig. 30(b). Alnor cart lined up and in position ready for data acquisition.

Figure 30. Alnor probe cart.



Figure 31. Laser leveler used to assist in laying white tape on test section floor.

Procedure for Alnor Probe Measurements of Ambient Wind Speed Ahead of Inlet

The Alnor probe was first positioned for data acquisition by rolling the cart to the required location, indicated by white adhesive tape on the vinyl floor using the pointer on the rear of the cart. The Alnor probe is designed to be a handheld probe and, as such, no preprogrammed sample duration is provided. The operator manually initiated the start of data acquisition and then retreated to the model prep area outside the NFAC test section to minimize interference with the measurement. Start time was noted, and 5 minutes later the operator returned to the probe to end data acquisition. The measurement data rate is fixed at 1 Hz, implying record lengths of close to 300 samples.

After rolling the cart to the next location (or raising/lowering the probe) the operator observed the real-time display on the probe to ensure that steady conditions had been achieved before initiating the start of data acquisition at the new location. This was particularly important in measuring the end-of-run ZERO, where significant time was required for the ambient wind and its associated recirculation to decay to zero, thereby providing a measurement of background recirculation inside the NFAC 80x120 test section at the location of interest.

Alnor probe measurements of ambient wind speed ahead of the 1/50th-scale 80x120 inlet are described in Table 3, the Alnor Probe Run Log Summary. Tabulated Alnor data are provided in Appendix A along with linear plots of individual Alnor probe surveys. Individual measurements of ambient wind speed, both mean and standard deviation, are also provided in Appendix A (Table A1). Standard deviations are included to provide confidence estimates for the mean velocities.

Procedure for Cobra Probe Measurements of Test Section Velocity

Testing was conducted in the test section of the full-scale NFAC 80x120 wind tunnel. Testing was performed with Vane Set 4 closed (NFAC in 40x80 configuration) to eliminate flow *through* the NFAC test section. Testing was conducted during daylight hours (as opposed to night), and there was no attempt to control slight recirculation effects within the full-scale test section. Sources of recirculation that went uncontrolled include the fan blower exhaust (from both the 1/50th-scale model and from ambient wind simulation), atmospheric winds entering the test section through the inlet, and thermally induced wind drafts due to full-scale 80x120 wall-temperature differentials.

Table 3. Alnor Probe Run Log Summary.

Date	Approx. Start Time	Run #	Model Position		Probe Position			Fan Hz	Sample Duration	Comments
			Building	(X, Y) ft	X (ft)	Y (ft)	Z (ft)			
Max-velocity survey at X = 61.3 feet; no buildings.										
4/3/2019	10:00 AM	11	-	-	61.3	-15 to +15	0.25	48.09	5 Min	
4/3/2019	1:30 PM	12	-	-	61.3	-15 to +15	0.5	47.73	5 Min	
4/4/2019	9:40 AM	14	-	-	61.3	-15 to +15	1	48	5 Min	
4/4/2019	1:15 PM	15	-	-	61.3	-15 to +15	2	48	5 Min	
4/4/2019	3:00 PM	16	-	-	61.3	-15 to +15	3	48	5 Min	
4/5/2019	12:45 PM	17	-	-	61.3	-15 to +15	4	48	5 Min	
4/8/2019	9:30 AM	19	-	-	61.3	-15 to +15	5	48	5 Min	
Max-velocity survey at X = 26.3 feet; no buildings.										
4/8/2019	2:00 PM	20	-	-	26.3	-15 to +15	2	48	5 Min	
4/9/2019	1:00 PM	21	-	-	26.3	-15 to +15	0.25	48	5 Min	
4/9/2019	3:00 PM	22	-	-	26.3	-15 to +15	0.5	48	5 Min	
4/15/2019	9:30 AM	23	-	-	26.3	-15 to +15	1	48.11	5 Min	
4/15/2019	11:00 AM	24	-	-	26.3	-15 to +15	3	48.11	5 Min	
4/15/2019	2:00 PM	25	-	-	26.3	-15 to +15	4	48.06	5 Min	
4/15/2019	3:30 PM	26	-	-	26.3	-15 to +15	5	48.06	5 Min	
Half-max-velocity survey at X = 26.3 feet; no buildings.										
4/16/2019	9:45 AM	27	-	-	26.3	0	2	Various	5 Min	Determine Fan Frequency for Half-Max Velocity
4/16/2019	11:00 AM	28	-	-	26.3	-15 to +15	2	26.02	5 Min	
4/16/2019	1:45 PM	29	-	-	26.3	-15 to +15	0.25	26.07	5 Min	

Table 3. Alnor Probe Run Log Summary (cont.)

Date	Approx. Start Time	Run #	Model Position		Probe Position			Fan Hz	Sample Duration	Comments
			Building	(X, Y) ft	X (ft)	Y (ft)	Z (ft)			
4/16/2019	3:15 PM	30	-	-	26.3	-15 to +15	0.5	26.07	5 Min	
4/17/2019	9:15 AM	31	-	-	26.3	-15 to +15	1	26.00	5 Min	
4/17/2019	1:00 PM	32	-	-	26.3	-15 to +15	3	26.02	5 Min	
4/17/2019	2:45 PM	33	-	-	26.3	-15 to +15	4	26.02	5 Min	
4/18/2019	9:45 AM	34	-	-	26.3	-15 to +15	5	26	5 Min	
Max-velocity survey at X = 61.3 feet; building G1 at X = 26.3 feet, Y = 0 feet.										
4/22/2019	10:00 AM	36	G1	26.3, 0	61.3	-15 to +15	2	48.06	5 Min	
4/22/2019	12:45 PM	37	G1	26.3, 0	61.3	-15 to +15	0.25	48.11	5 Min	
4/22/2019	2:00 PM	38	G1	26.3, 0	61.3	-15 to +15	0.5	48.11	5 Min	
4/23/2019	9:00 AM	39	G1	26.3, 0	61.3	-15 to +15	1	48.09	5 Min	
4/23/2019	11:00 AM	40	G1	26.3, 0	61.3	-15 to +15	3	48.09	5 Min	
4/23/2019	1:00 PM	41	G1	26.3, 0	61.3	-15 to +15	4	48.06	5 Min	
4/23/2019	2:45 PM	42	G1	26.3, 0	61.3	-15 to +15	5	48.06	5 Min	
Max-velocity streamwise surveys at Y = 0 feet, Z = 2 feet.										
4/3/2019	4:00 PM	13	-	-	5 to 61.3	0	2	48	5 Min	Max Velocity
4/5/2019	3:00 PM	18	-	-	10 to 61.3	0	2	48	5 Min	Max Velocity
4/18/2019	11:30 AM	35	-	-	10 to 60	0	2	26	5 Min	Half-Max Velocity
Weather tower surveys at X = 70.33 feet; NASA buildings present.										
6/14/2019	8:30 AM	45	NASA	-	70.33	0	0 to 2.0	47.97	5 Min	V_{ts} = 0
6/14/2019	9:15 AM	46	NASA	-	70.33	0	0 to 2.0	47.97	5 Min	V_{ts} = 100 kts
6/14/2019	10:15 AM	47	NASA	-	70.33	0	0 to 2.0	0	5 Min	V_{ts} = 100 kts

The 19.2-inch (vertical) x 28.8-inch (horizontal) dimensions represent the interior vertical and horizontal dimensions of the 1/50th-scale 80x120 test section without allowance for the acoustic liner of the full-scale facility (Fig. 21). Each area survey started on the test section centerline, (Y = 0, Z = 0) grid point 13. After completion of this data point, the probe was raised 7.40 inches and driven to the new lateral location at Y = –10.80 inches (far left in pilot view). The probe was then LOWERED to Z = 7.20 inches (sealing between the probe support and the test section ceiling) before commencing data acquisition at grid point 1. Data acquisition at grid points 2, 3, 4, and 5 were all approached from above, thereby maintaining the seal. After completion of data acquisition at grid point 5, the probe was moved to the right 5.4 inches and raised to Z = 7.40 inches to start the second vertical survey by decreasing Z to 7.20 inches. The fifth vertical survey ends at grid point 25 after which the probe was raised to Z = 7.40 inches, moved to Y = 0, lowered to Z = 0.0, and data reacquired at grid point 13. Measurements are therefore obtained on the test section centerline three separate times, providing an automatic check on repeatability at the most important location in the area survey. Each area survey consists of 27 measurements of test section velocity.

On occasion, a vertical survey through the test section centerline was preferred over the more time-consuming area survey. In that case, each line survey proceeded as follows: grid point 13, followed by grid points 11, 12, 13, 14, 15, ending on grid point 13, always approaching the measurement location from above to ensure the probe support is sealed where it passes through the ceiling, and providing both initial and final measurements on the test section centerline.

The Cobra probe was located on the test section centerline at the start and end of every run. The centerline probe position was verified prior to each run by checking the survey apparatus location from outside the test section. To minimize thermal drift of the Cobra probe transducers, every run started with a ZERO point. Each ZERO point refers to $V_{wind} = V_{ts} = 0$ (all blowers OFF). Once installed in the 1/50th-scale 80x120 test section, the Cobra probe becomes difficult to access and therefore difficult to cap for the ZERO-point measurement. The nearest approximation to zero velocity at the probe was achieved by blocking the 1/50th-scale inlet with a 4-foot by 8-foot sheet of poster board. The poster board was carefully held in place against the front face of the inlet to seal the inlet and prevent flow *through* the 1/50th-scale 80x120 test section, thereby providing zero velocity at the Cobra probe located on the centerline of the test section.

Various runs were repeated multiple times as a check on measurement repeatability despite variations in external atmospheric wind conditions, time of day, thermal gradients inside the NFAC 80x120 test section, etc.

Cobra probe measurements of velocity in the 1/50th-scale test section are described in Table 4, the Cobra Probe Run Log Summary. Tabulated Cobra probe data are provided in Appendix B. Measurements of mean velocity in three orthogonal directions, plus I_{uu}, I_{vv}, I_{ww}, and I_{uvw} (see Nomenclature) are presented in Appendix B, Table B1. Appendix B also contains linear plots and area plots of test section flow quality.

The Alnor probe provides ambient wind speed in feet-per-minute, yet wind speed is normally quoted in miles-per-hour. Similarly, the Cobra probe provides velocity components in meters-per-second yet test section velocity in the NFAC is normally quoted in knots. All raw data

provided upstream of the inlet (by the Alnor probe) or inside the test section (by the Cobra probe) are tabulated in the Appendices in their default engineering units. Table 5 lists appropriate conversion constants between the different units of wind speed.

Table 4. Cobra Probe Run Log Summary.

Area Surveys in Test Section

Run #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (kts)
32	0	none	area	max	50
33	-30	none	area	max	50
34	-60	none	area	max	50
35	-90	none	area	max	50
38	0	none	area	max	50
49	-30	none	area	none	20
50	-30	none	area	max	20
51	0	none	area	max	20
52	0	none	area	none	20
53	-90	none	area	none	20
54	-90	none	area	max	20
55	-60	none	area	none	20
56	-60	none	area	max	20
57	30	none	area	none	20
58	30	none	area	max	20
59	60	none	area	none	20
60	60	none	area	max	20
61	90	none	area	none	20
62	90	none	area	max	20
64	-38.06	pre-2019	area	none	20
65	-38.06	pre-2019	area	max	20
66	-38.06	pre-2019	area	max	20
67	-43.92	pre-2019	area	none	20
70	-43.92	pre-2019	area	max	20
71	0	MVC + NASA Trailers	area	none	20
72	0	MVC + NASA Trailers	area	max	20
74	22.32	MVC + NASA Trailers	area	none	20
78	22.32	MVC + NASA Trailers	area	max	20
79	-34	none	area	none	20

Table 4. Cobra Probe Run Log Summary (cont.)
Area Surveys in Test Section

Run #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (kts)
80	-34	none	area	max	20
83	-34	NASA	area	none	20
84	-34	NASA	area	max	20
85	-34	NASA + Google	area	none	20
86	-34	NASA + Google	area	max	20
87	-34	NASA + Google	area	max	20
88	-29	none	area	none	20
89	-29	none	area	none	50
90	-29	none	area	max	20
91	-29	none	area	max	50
92	-29	NASA	area	none	20
93	-29	NASA	area	max	20
94	-29	NASA + Google	area	none	20
97	-29	NASA + Google	area	max	20
99	-29	NASA + Google	area	max	20
100	-29	NASA + Google	area	none	50
101	-29	NASA + Google	area	max	50
102	-29	NASA + Google	area	max	100
106	-29	NASA + Google	area	max	100
107	-29	NASA + Google	area	none	100
109	-29	NASA + Google	area	max	50
110	-29	NASA + Google	area	max	20
111	-24	none	area	none	20
112	-24	none	area	max	20
113	-24	NASA + Google	area	none	20
114	-24	NASA + Google	area	max	20
115	-24	NASA + Google	area	none	20
116	-24	NASA + Google	area	max	20
117	-24	NASA + Google	area	max	20
157	0	none	area	max	100
158	0	none	area	none	50
159	0	none	area	max	50
172	-29	ALL	area	max	20
173	-29	ALL	area	max	50
176	-29	ALL	area	none	5 m/s
177	-29	ALL	area	max	5 m/s
178	-29	ALL	area	none	100
179	-29	ALL	area	max	100

Table 4. Cobra Probe Run Log Summary (cont.)
Area Surveys in Test Section

Run #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (kts)
180	-29	ALL	area	none	50
185	-29	ALL	area	none	20
186	-29	ALL	area	max	20
187	-29	pre-2019	area	none	20
188	-29	pre-2019	area	max	20
195	-29	pre-2019	area	none	50
196	-29	pre-2019	area	max	50
197	-29	pre-2019	area	none	100
198	-29	pre-2019	area	max	100
200	-29	pre-2019	area	max	50
201	-29	pre-2019	area	max	5 m/s
202	-29	ALL	area	max	5 m/s
203	-29	none	area	max	20
204	-29	none	area	max	50
205	-29	none	area	max	5 m/s
206	-29	none	area	none	100
207	-29	none	area	max	100

Single Point Measurements on Test Section Centerline

Run #, Pt #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (m/s)
39.02-39.12	0	none	Single point on TS Centerline	none	5-50
39.13-39.20				75%	5-50
39.21-39.28				max	5-50
41.02-41.10	-90	none	Single point on TS Centerline	none	5-50
41.11-41.18				max	5-50
41.19-41.22				75%	5-15
41.23-41.26				50%	5-15
42.02-42.09	-60	none	Single point on TS Centerline	none	5-50
42.10-42.18				max	5-50
42.19-42.22				75%	5-15
42.23-42.26				50%	5-15
44.04-44.11	-30	none	Single point on TS Centerline	none	5-50
44.12-44.19				max	5-50
44.20-44.23				75%	5-15
44.24-44.27				50%	5-15
45.02-45.09	0	none	Single point on TS Centerline	none	5-50
45.10-45.17				max	5-50
45.18-45.21				75%	5-15
45.22-45.25				50%	5-15

Table 4. Cobra Probe Run Log Summary (cont.)
Single Point Measurements on Test Section Centerline

Run #, Pt #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (m/s)
46.02-46.09	30	none	Single point on TS Centerline	none	5-50
46.11-46.19				max	5-50
46.20-46.24				75%	5-15
46.25-46.29				50%	5-15
47.02-47.11	60	none	Single point on TS Centerline	none	5-50
47.12-47.21				max	5-50
47.22-47.26				75%	5-15
47.27-47.31				50%	5-15
48.02-48.10	90	none	Single point on TS Centerline	none	5-50
48.11-48.19				max	5-50
48.20-48.25				75%	5-20
48.26-48.31				50%	5-20
118.02-118.06	0	none	Single point on TS Centerline	25%	10-50
118.07-118.11				50%	10-50
118.12-118.16				75%	10-50
118.17-118.21				max	10-50
120.02-120.06	0	none	Single point on TS Centerline	25%	10-50
120.07-120.11				50%	10-50
120.12-120.16				75%	10-50
120.17-120.21				max	10-50
170.02-170.06	0	All	Single point on TS Centerline	none	10-50
170.07-170.11				12.50%	10-50
170.12-170.16				25%	10-50
170.17-170.21				37.50%	10-50
170.22-170.26				50%	10-50
170.27-170.31				62.50%	10-50
170.32-170.36				75%	10-50
170.37-170.41				87.50%	10-50
170.42-170.46				100%	10-50
171.02-171.06	-29	All	Single point on TS Centerline	none	10-50
171.07-171.11				12.50%	10-50
171.12-171.16				25%	10-50
171.17-171.21				37.50%	10-50
171.22-171.26				50%	10-50
171.27-171.31				62.50%	10-50
171.32-171.36				75%	10-50
171.37-171.41				87.50%	10-50
171.42-171.46				100%	10-50

Table 4. Cobra Probe Run Log Summary (cont.)
Single Point Measurements on Test Section Centerline

Run #, Pt #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (m/s)
175.02-175.07	-29	All	Single point on TS Centerline	none	5-50
175.09-175.14				12.50%	5-50
175.15-175.20				25%	5-50
175.21-175.26				37.50%	5-50
175.27-175.32				50%	5-50
175.33-175.38				62.50%	5-50
175.39-175.44				75%	5-50
175.45-175.50				87.50%	5-50
175.51-175.56				100%	5-50
184.02-184.07	-29	All	Single point on TS Centerline	none	5-50
184.08-184.13				12.50%	5-50
184.14-184.19				25%	5-50
184.20-184.25				37.50%	5-50
184.26-184.31				50%	5-50
184.32-184.37				62.50%	5-50
184.38-184.43				75%	5-50
184.44-184.49				87.50%	5-50
184.50-184.55				100%	5-50
189.02-189.07	-29	none	Single point on TS Centerline	none	5-50
189.08-189.13				12.50%	5-50
189.14-189.19				25%	5-50
189.20-189.25				37.50%	5-50
189.26-189.31				50%	5-50
189.32-189.37				62.50%	5-50
189.38-189.43				75%	5-50
189.44-189.49				87.50%	5-50
189.50-189.55				100%	5-50
194.02-194.07	-29	pre-2019	Single point on TS Centerline	none	5-50
194.08-194.13				12.50%	5-50
194.14-194.19				25%	5-50
194.20-194.25				37.50%	5-50
194.26-194.31				50%	5-50
194.32-194.37				62.50%	5-50
194.38-194.43				75%	5-50
194.44-194.49				87.50%	5-50
194.50-194.55				100%	5-50

Table 4. Cobra Probe Run Log Summary (cont.)
Spires and 2D/3D Blockage

Run #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (kts)
122	0	tall spires	area	none	10 m/s
123	0	tall spires	area	none	20 m/s
124	0	tall spires	area	max	10 m/s
125	0	tall spires	area	max	20 m/s
126	0	short spires	area	none	10 m/s
127	0	short spires	area	none	20 m/s
128	0	short spires	area	max	10 m/s
129	0	short spires	area	max	20 m/s
152	0	2ft x 32ft; x=48ft -16 < y < +16	area	none	50
153	0	2ft x 32ft; x=48ft -16 < y < +16	area	max	50
154	0	2ft x 32ft; x=48ft -16 < y < +16	area	max	100
155	0	2ftx32ft; x=48ft -16 < y < +16	area	max	100
156	0	2ftx32ft; x=48ft -16 < y < +16	area	none	100
160	0	1ftx16ft; x=12ft 0 < y < +16	area	max	50
162	0	2ftx16ft; x=12ft 0 < y < +16	area	max	50
163	0	4ftx16ft; x=12ft 0 < y < +16	area	max	50
164	0	1ftx16ft; x=2ft -8 < y < +8	area	max	50
165	0	1ftx16ft; x=2ft -8 < y < +8	area	max	100
166	0	1ftx16ft; x=4ft -8 < y < +8	area	max	50
167	0	1ftx16ft; x=4ft -8 < y < +8	area	max	100
168	0	1ftx16ft; x=8ft -8 < y < +8	area	max	50
169	0	1ftx16ft; x=8ft -8 < y < +8	area	max	100

Table 4. Cobra Probe Run Log Summary (cont.)
Spires and 2D/3D Blockage

Run #, Pt #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (kts)
131	0	1ftx16ft; x=12ft -8 < y +8	Vertical Survey through TS mid-point	none	50
132				none	100
133				max	50
134				max	100
135	0	1ftx16ft; x=12ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
136				max	50
137				none	100
138				max	100
139.02-139.08	0	2ftx16ft; x=12ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
139.09-139.15				max	50
139.16-139.22				none	100
139.23-139.29				max	100
140.02-140.08	0	4ftx16ft; x=12ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
140.09-140.15				max	50
140.16-140.22				none	100
140.23-140.29				max	100
141.02-141.08	0	3ftx16ft; x=12ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
141.09-141.15				max	50
141.16-141.22				none	100
141.23-141.29				max	100
142.02-142.08	0	1ftx16ft; x=20ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
142.09-142.15				max	50
142.16-142.22				none	100
142.23-142.29				max	100
143.02-143.08	0	2ftx16ft, x=20ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
143.09-143.15				max	50
143.16-143.22				none	100
143.23-143.29				max	100
144.02-144.08	0	4ftx16ft, x=20ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
144.09-144.15				max	50
144.16-144.22				none	100
144.23-144.29				max	100
145.02-145.08	0	1ftx16ft, x=28ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
145.09-145.15				max	50
145.16-145.22				none	100
145.23-145.29				max	100

Table 4. Cobra Probe Run Log Summary (concluded).
Spires and 2D/3D Blockage

Run #, Pt #	Yaw (°)	Buildings	Survey Type	Ambient Wind	TS Speed (kts)
146.02-146.08	0	2ftx16ft, x=28ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
146.09-146.15				max	50
146.16-146.22				none	100
146.23-146.29				max	100
148.02-148.08	0	4ftx16ft, x=28ft -8 < y < +8	Vertical Survey through TS mid-point	none	50
148.09-148.15				max	50
148.16-148.22				none	100
148.23-148.29				max	100
149.02-149.08	0	None	Vertical Survey through TS mid-point	none	50
149.09-149.15				max	50
149.16-149.22				none	100
149.23-149.29				max	100
150.02-150.08	0	1ftx32ft, x=48ft -16 < y < +16	Vertical Survey through TS mid-point	none	50
150.09-150.15				max	50
150.16-150.22				none	100
150.23-150.29				max	100
151.02-151.08	0	2ftx32ft, x=48ft -16 < y < +16	Vertical Survey through TS mid-point	none	50
151.09-151.15				max	50
151.16-151.22				none	100
151.23-151.29				max	100

Table 5. Useful Conversion Constants.

The following conversion constants may prove useful in interpreting some of the data plots arising from either the Alnor anemometer ahead of the inlet or the Cobra probe inside the 1/50th-scale test section.

1. Ambient wind speed ahead of the 1/50th-scale 80x120 inlet was measured with an Alnor anemometer calibrated in fpm. Atmospheric wind speed is normally quoted in mph, however.

   30 mph = 44 fps; 1 mph = 1.4667 fps; 1 fps = 60 fpm

2. Test section velocity in the 1/50th-scale wind tunnel was measured with a Cobra probe calibrated in m/s. Test section velocity in the NFAC 80x120 wind tunnel is normally quoted in knots, however. For example, maximum speed in the NFAC full-scale 80x120 test section = 100 knots.

   1 knot = 1 nautical mile/hour
   1 knot = 1.68781 fps = 1.15078 mph = 0.51444 m/s
   1 m/s = 3.28084 fps = 1.94384 knots = 2.23694 mph

   20 knots = 10.289 m/s
   50 knots = 25.722 m/s
   100 knots = 51.444 m/s

   5 m/s = 9.72 knots
   10 m/s = 19.44 knots
   20 m/s = 38.88 knots
   30 m/s = 58.32 knots
   40 m/s = 77.75 knots
   50 m/s = 97.19 knots

RESULTS AND DISCUSSION

If the wind is from a direction that will carry the wake from a particular building towards the 80x120 inlet, the concern is that the wake may be ingested into the inlet and the flow quality in the test section could suffer. There are several effects of possible concern. First, the flow will likely accelerate in going around and over the building in question. This local acceleration of wind speed in the vicinity of the building will rapidly decrease with downstream distance. Second, the wake will exhibit a velocity defect that will also diminish with downstream distance from the building. This will result in a slightly reduced wind speed at the inlet. This could be advantageous. The nonuniform velocity profile that still exists in the building wake arriving at the inlet could adversely affect flow uniformity in the test section. Finally, the building wake will be an area of increased turbulence, decaying with downstream distance from the building. The ingestion of wake turbulence over and above any turbulence associated with the ambient wind ahead of the inlet is expected to be of primary concern in the current study.

It should be noted again that without ambient wind, the test section turbulence measurements were unaffected by existing and simulated buildings beyond 800 feet from the inlet at full scale. This finding prior to the Google 2.0 test, where the buildings are beyond 2,000 feet from the inlet at full scale, left open the possibility that the aerodynamic treatment at the inlet (splayed vanes, horizontal splitter plates, and two screens) together with the large distances involved in the tunnel contraction would mitigate the wind-induced effects as measured by turbulence levels in the test section itself.

The use of silhouettes to represent Google Campus buildings warrants some discussion as it will clearly affect the simulation veracity. The drag coefficient associated with such a silhouette (a flat plate perpendicular to the wind direction) will naturally be considerably larger than for the corresponding 3D building from which it is constructed because of the increased size of the wake. It is not immediately obvious how large an effect this will have on wake turbulence, but some guidance is available from the experimental study of homogenous turbulence. The initial period of decay of turbulence created from a square 2D grid (Ref. 9) can be described by the equation

$$(U / u')^2 = (A / C_d) \{(x - x_o) / M\}$$

where C_d is the grid drag coefficient, x is distance downstream from the grid, x_o defines the virtual origin location, and M is the mesh length of the grid. For such a turbulence generator, the turbulence level is assumed to be homogeneous in Y and Z. If this equation can be loosely applied to the generation of turbulence behind a 3D body, then the above equation can be rewritten in the form

$$u'^2 \sim V^2_{wind}. C_d. \{(x - xo)/D\}^{-1}$$

where M has been replaced by a representative cross-stream body dimension D perpendicular to the wind; $D \sim$ sqrt (area of cross-section of body).

This implies that the turbulent energy generated by a 3D body will be lower than from the corresponding silhouette created from such a body because of the lower drag coefficient of the 3D body. Hence turbulence measurements made downstream from a silhouette in the model-scale simulation (either ahead of the inlet or inside the test section) are expected to be higher than would be found at full scale.

Ambient Wind Measurements

It is instructive to begin the discussion with a review of the ambient wind speed measurements because the turbulent energy downstream from any building will depend on the turbulent energy created in the wake of the building, as described above. Also, the time taken for the building wake to reach the inlet provides time for this turbulent energy to start the process of decay. Finally, the wind speed at the inlet will determine the degree of success of the inlet in isolating the ambient wind effect from the test section turbulence.

Note that in the current simulation, wind speed encountered at the Google Campus will be different from wind immediately ahead of the inlet because of the nature of the finite aspect ratio wall jet that is used to represent the ambient wind. The wall jet will grow both in thickness and width, causing the maximum velocity in the wall jet to continuously decrease with increasing

downstream distance from the six-blower array exit plane. This results in a higher wind speed at any upwind building location (where turbulence is generated) than wind speed that arrives at the inlet. This is not how atmospheric winds are expected to behave ahead of the NFAC 80x120 inlet. At first thought, how to account for this unfortunate feature of the simulated ambient wind is troubling. One simple way to look at this is to determine the average wind speed at the Google Campus and accept that more turbulent energy is created by any upwind building than would be anticipated based on the average wind speed just ahead of the inlet, but acknowledge that the inlet performance is dictated by the wind speed at the inlet. Hence, turbulence arriving at the inlet in the 1/50th-scale simulation for the particular wind speed measured at the inlet is greater than anticipated for the full-scale facility.

Note that the decay time for turbulence in the 1/50th-scale simulation will be 1/50th of the decay time available at full scale (since full-scale velocities are matched at model scale) so this indicates that the model-scale study will overestimate expected turbulence levels in the full-scale 80x120 test section. Decay of the wall jet velocity with downstream distance in the simulation helps mitigate this difficulty with the current model-scale study.

Figure 24(b) shows that the exit plane of the six-blower array is 74.33 feet upwind from the 1/50th-scale 80x120 inlet plane for turntable yaw = 0 degrees. The Googleplex CAD drawing places the center of Google building G1 48.58 feet from the center of the inlet as illustrated in Figure 25(c). For a turntable yaw angle of –29 degrees, the center of building G1 is therefore approximately 26.3 feet downstream from the exit plane of the six-blower array (Fig. 25(b)). Alnor surveys perpendicular to the centerline of the tunnel at Z = 0.25, 0.50, 1, 2, 3, 4, and 5 feet above the heavy-duty vinyl sheet covering the NFAC test section floor constitute an area survey at that location. The contour plot of wind speed at X = 26.3 feet with no buildings present is shown in Figure 32(a) for maximum output from the blowers. The silhouette of building G1 has been added in order to evaluate the average wind speed (over the area of the silhouette) at the location of building G1, namely 12.7 mph, for blowers operating at maximum speed.

Recall that the six-blower array was installed in the NFAC 80x120 wind tunnel displaced 3.5 feet off centerline (towards the east wall; to the left, looking downstream from the blowers) based on the two-blower risk reduction findings. It is not surprising, therefore, to find that the peak ambient wind occurs roughly 3 feet off centerline, towards the east wall, 26.3 feet downstream from the six-blower array exit plane.

Extracting data from the above lateral surveys at X = 26.3 feet for Y = 0 allowed the construction of Figure 33, showing a typical wall jet velocity profile at the center of building G1 (no buildings present and six-blower array running at maximum speed; 80x120 model installed but nonoperational with yaw = 0 degrees). Limits of ±1 standard deviation about the mean velocity are also shown.

A similar contour plot for wind speed at the downstream location of the inlet was needed, but the 1/50th-scale wind tunnel had already been installed prior to these measurements of ambient wind. To minimize any upstream influence of the inlet on the ambient wind measurement the location X = 61.3 feet downstream from the six-blower-array exit plane was selected for this second area survey at 0 degrees yaw (Fig. 32(b)) and either ±90 degrees yaw (Fig. 32(c)). This positions the survey plane approximately 13.03 feet ahead of the 1/50th-scale inlet plane for yaw

= 0 degrees. The contour plot of ambient wind speed measurements at this location is shown in Figure 32(b). The silhouette of the 1/50th-scale inlet is added in order to evaluate the wind speed averaged over the inlet area at this location, roughly 9.4 mph for blowers operating at maximum speed. Note that the peak wind speed aligns closely with the center of the inlet, justifying the lateral offset of the six-blower array in the NFAC test section. Figure 32(c) shows the same ambient wind speed contours as Figure 32(b) with added inlet silhouettes corresponding to turntable yaw angles of ±90 degrees. Note that the complete 80x120 wind tunnel leg was present for the ambient wind speed measurements shown in Figure 32. Note further that the nonuniform ambient wind with additional wind-skew delivers somewhat different wind speeds across the inlet face for yaw = ±90 degrees. Figure 32(c) may prove useful in explaining any differences in inlet performance between yaw = –90 and +90 degrees. In all cases, for Figure 32 the blowers were operating at maximum speed with no upwind buildings present and the 1/50th-scale wind tunnel present but not operating. All contour plots in Figure 32 are presented looking downstream from the six-blower assembly, with the positive Y-direction towards the east wall.

Extracting wind speed measurements from lateral surveys at X = 26.3 feet for Y = 0 feet allowed the construction of Figure 33, showing a higher wind speed and a somewhat thinner wall jet than at X = 61.3 feet shown in Figure 34 (no buildings present and six-blower array running at maximum speed).

Streamwise surveys of ambient wind speed ahead of the inlet along the wind tunnel centerline were performed in Runs 13, 18, and 35 for Y = 0 at Z = 2 feet for no upwind buildings, at maximum blower speed. The results are shown plotted in Figure 35. Using this figure it is possible to extrapolate ambient wind speed from X = 61.3 feet to the inlet at X = 74.33 feet to obtain a reasonable estimate for the ambient wind speed at the inlet of approximately 8 mph. Initially, there were concerns that the test was not a complete success since ambient winds up to 20 mph can be expected ahead of the NFAC inlet, yet these were not tested. However, as shown later, the limited ambient wind speed did not negatively impact the conclusions from the test.

Finally, an abbreviated vertical survey was performed on the tunnel centerline, 4 feet ahead of the inlet (200 feet at full scale), representing the approximate weather tower location. Figure 36(a) shows that the 1/50th-scale wind tunnel running at maximum speed (100 knots in the test section) induces a wind speed at the weather tower location of roughly 350 fpm (almost 4 mph). Figure 36(b) shows the ambient wind at the tower location with zero test section velocity. Note the reduction in wind speed compared with that at X = 61.3 feet shown in Figure 34 (upstream influence of inlet). The maximum wind and 100-knot test section velocity case is illustrated in Figure 36(c), and Figure 36(d) shows all three cases in the same figure.

After the test was completed, the NFAC provided an updated drawing showing that the current weather tower is actually located 10 feet east of the tunnel centerline, 295 feet upwind from the inlet plane. This was good news as it placed the weather tower farther upwind than assumed in the current test, making the full-scale weather tower location less susceptible to upstream influence from the 80x120 inlet than simulated at model scale. The above measurements (for a weather tower located 200 feet ahead of the inlet) can be used to validate computational fluid dynamics (CFD) calculations for the upwind influence of the inlet and estimate any influence at the current weather tower location (located 295 feet ahead of the inlet).

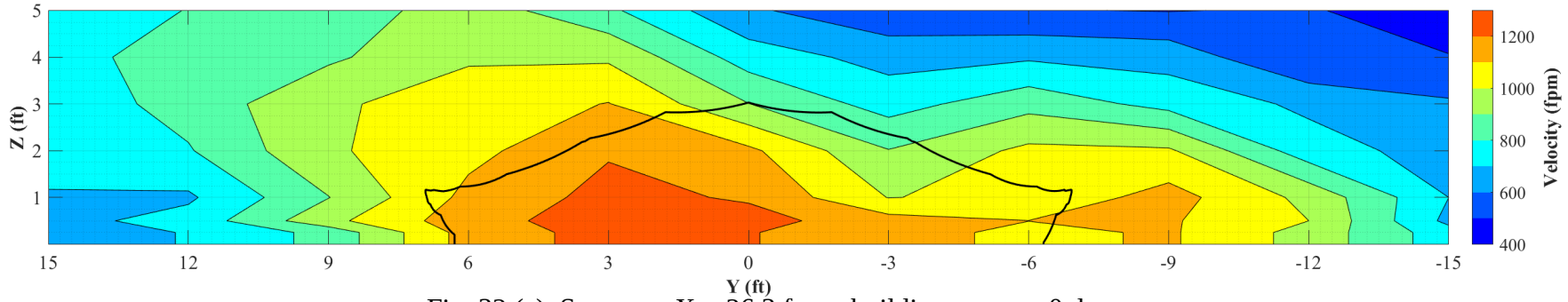


Fig. 32 (a). Survey at X = 26.3 ft; no buildings, yaw = 0 deg.

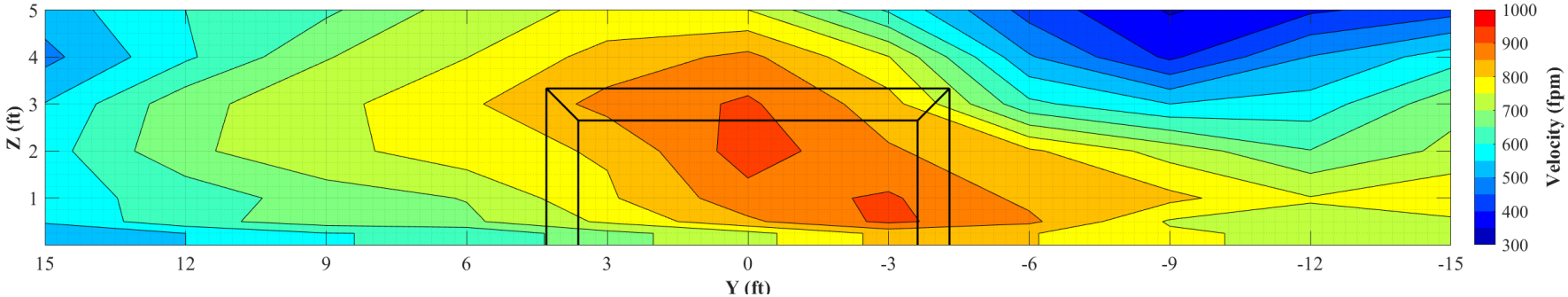


Fig. 32 (b). Survey at X = 61.3 ft; no buildings, yaw = 0 deg.

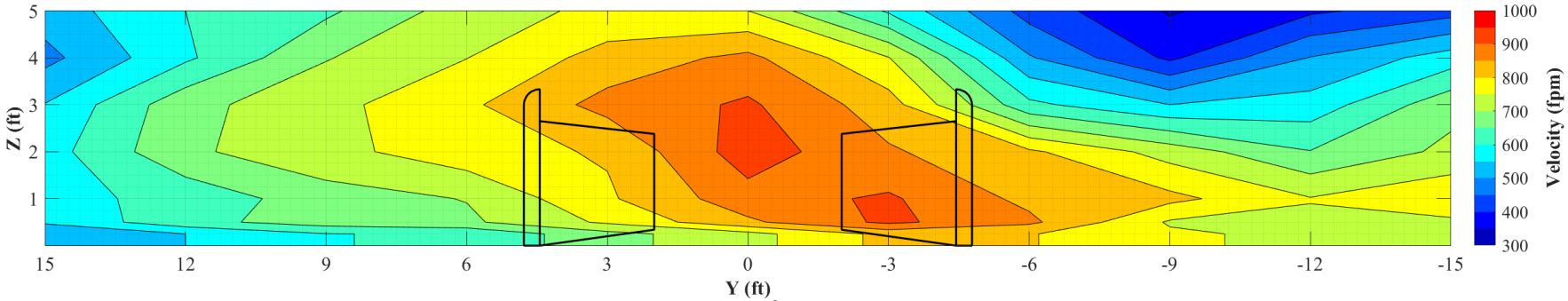


Fig. 32 (c). Survey at X = 61.3 ft, no buildings, yaw = ±90 deg.

Figure 32. Contour plots of ambient wind speed at maximum wind; downstream views from six-blower array (+Y is east, –Y is west).

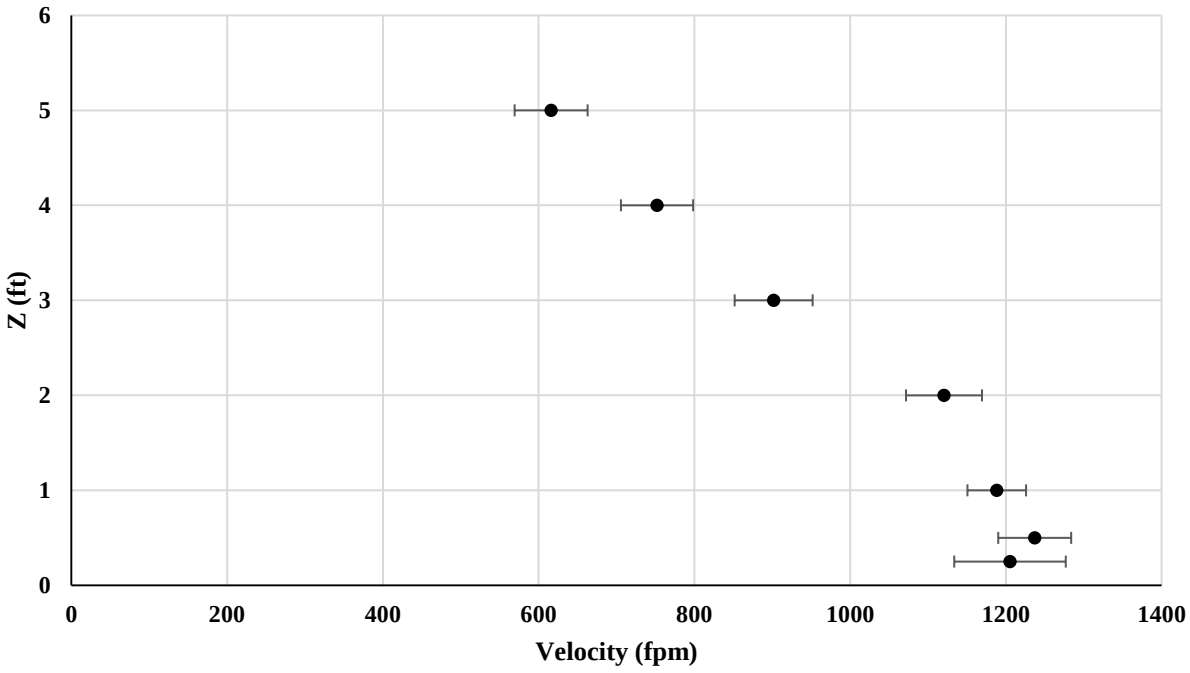


Figure 33. Velocity profile at X = 26.3 ft, Y = 0 ft, no buildings, max wind.

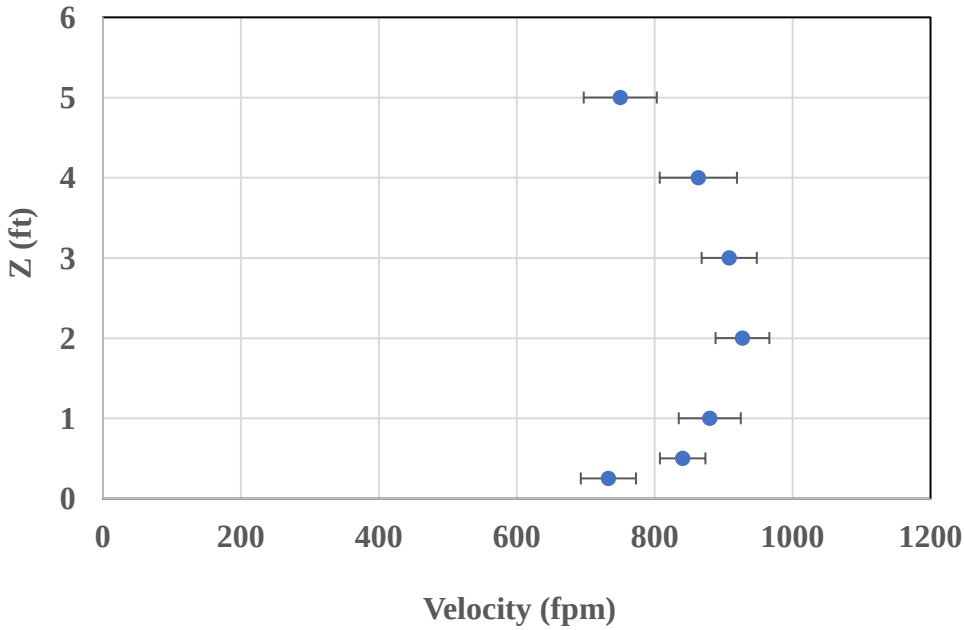


Figure 34. Velocity profile at X = 61.3 ft, Y = 0 ft, no buildings, max wind.

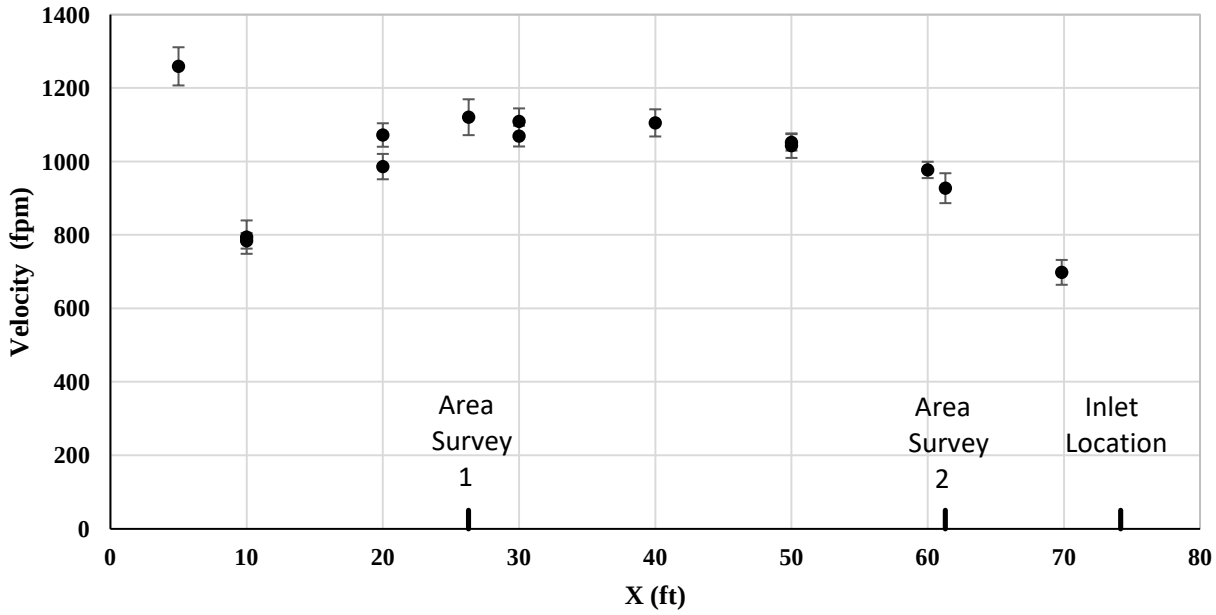


Figure 35. Streamwise ambient wind speed survey for Y = 0 ft, Z = 2 ft, max wind.

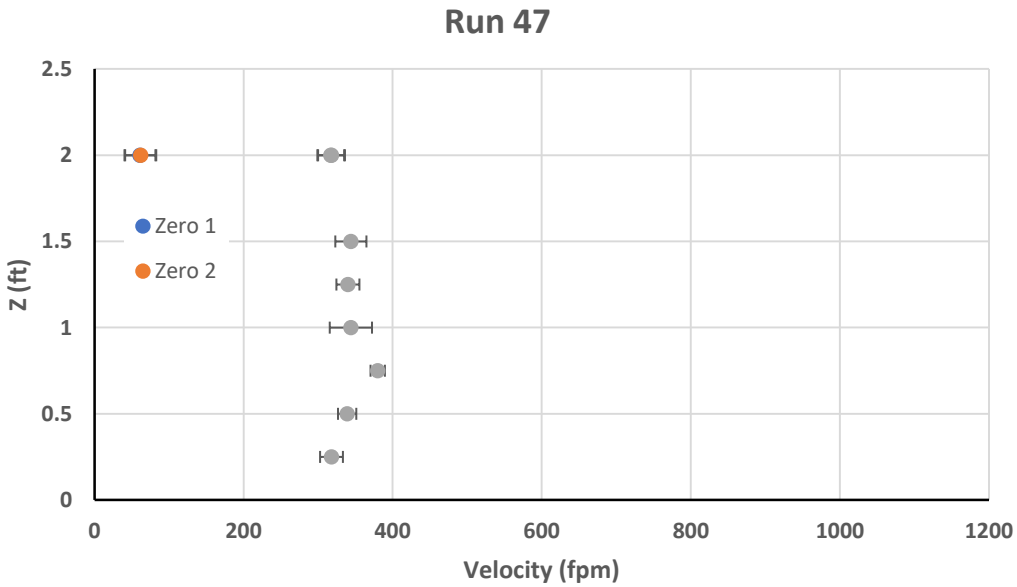


Fig. 36(a). Vertical survey of ambient wind speed 4 ft ahead of inlet (200 ft at full scale). $V_{wind} = 0$, $V_{ts} = 100$ kts.

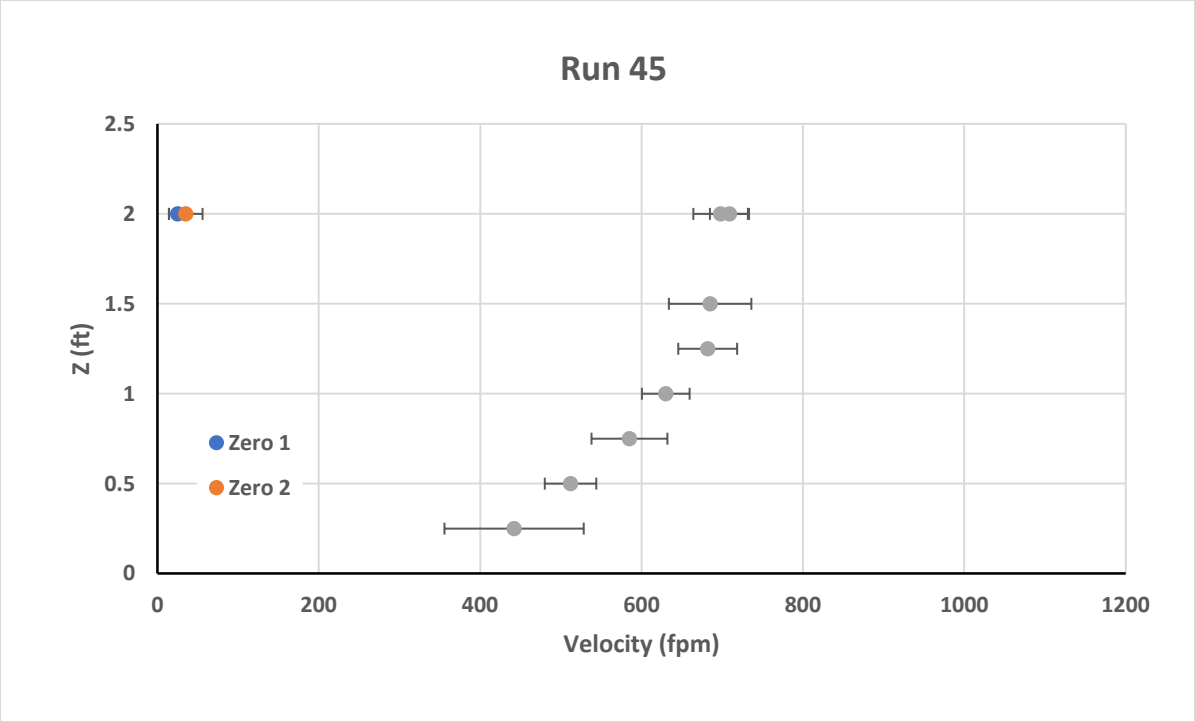


Fig. 36(b). Vertical survey of ambient wind speed 4 ft ahead of inlet (200 ft at full scale). Max wind, V_{ts} = 0.

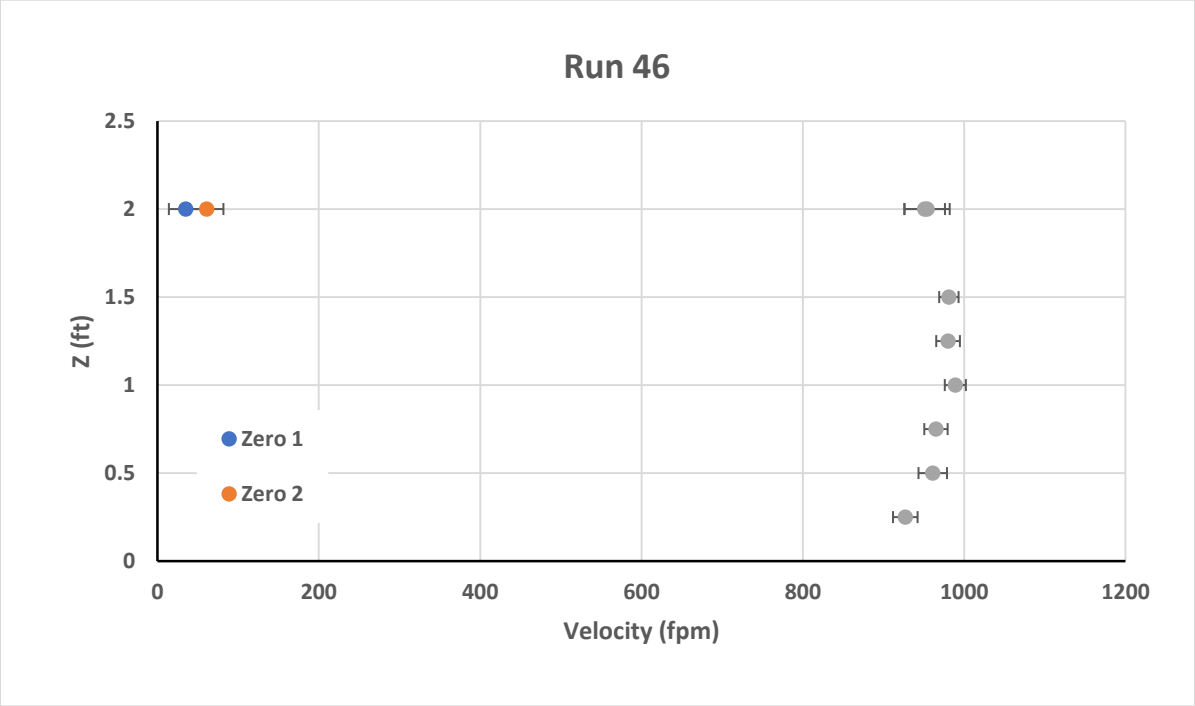


Fig. 36(c). Vertical survey of ambient wind speed 4 ft ahead of inlet (200 ft at full scale). Max wind, V_{ts} = 100 kts.

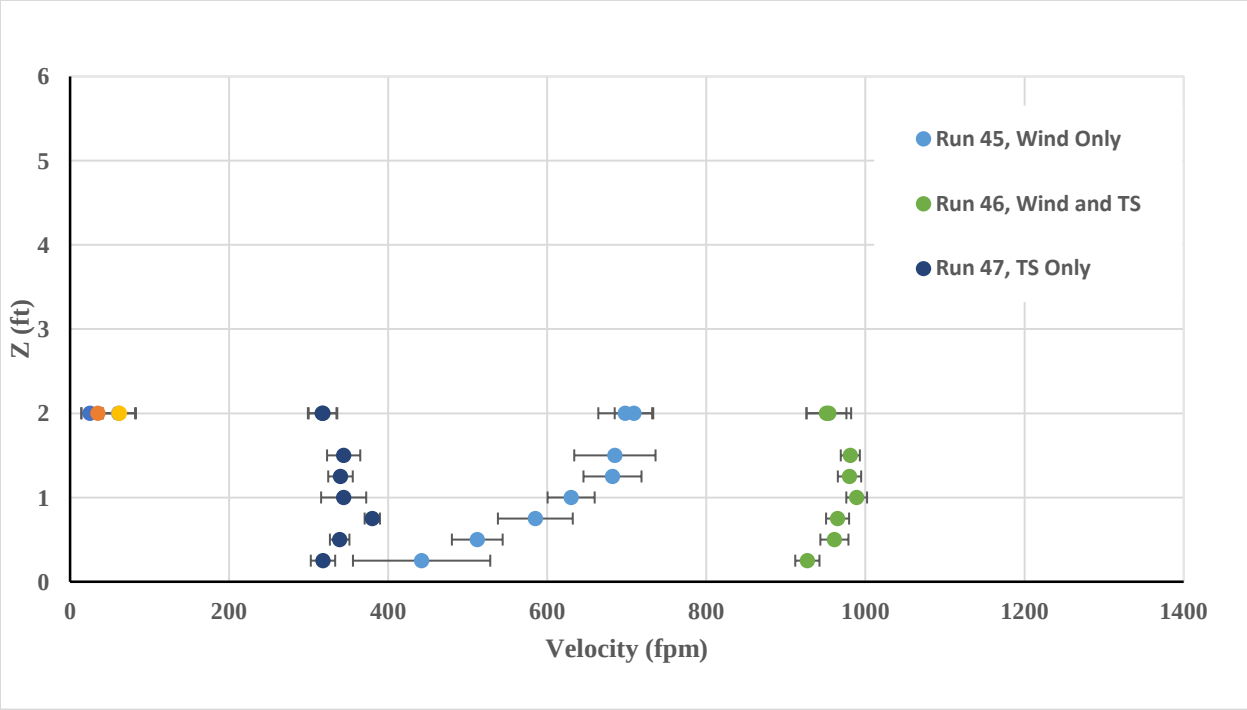


Fig. 36(d). Vertical survey of ambient wind speed 4 ft ahead of inlet (200 ft at full scale).

Figure 36. Vertical survey of ambient wind speed (no buildings).

Effect of Atmospheric Wind on Inlet Performance, No Upwind Buildings

Inlet performance, defined by test section *centerline* turbulence as a function of wind speed, wind direction, and test section velocity, is demonstrated in Runs 41 to 48 for *no upwind buildings* as shown in Figure 37. Turntable yaw angle is positive for rotation in the clockwise direction when viewed from above as illustrated in Figures 25(a) to 25(c) and 26.

Measurements of each component of relative turbulence intensity at the test section centerline (I_{uu}, I_{vv}, and I_{ww}) are presented in Figure 37 in addition to the average turbulence intensity (I_{uvw}) as a function of V_{wind}/V_{ts} for turntable yaw angles from –90 to +90 degrees. In each subplot of Figure 37, a single color represents a specific velocity in the test section, V_{ts}, as V_{wind} is varied from 0 to 50 percent, 75 percent, and finally 100 percent max-V_{wind}. Maximum V_{wind} is approximately 8 mph at the inlet for maximum output from the six-blower array. A linear least-squares curve fit has been applied to each data set at constant test section velocity. Each linear least-squares curve fit is close to horizontal, indicating that the centerline turbulence intensity is, in general, insensitive to atmospheric wind in both magnitude and direction.

For V_{wind} = 0, the Y-axis shows the dependence of centerline turbulence on V_{ts} alone. The increase in test section turbulence as the test section velocity is decreased for V_{wind} = 0 is clearly more significant than the dependence on V_{wind} because test section centerline turbulence has been shown to be almost independent of V_{wind} (curve fit lines are almost horizontal).

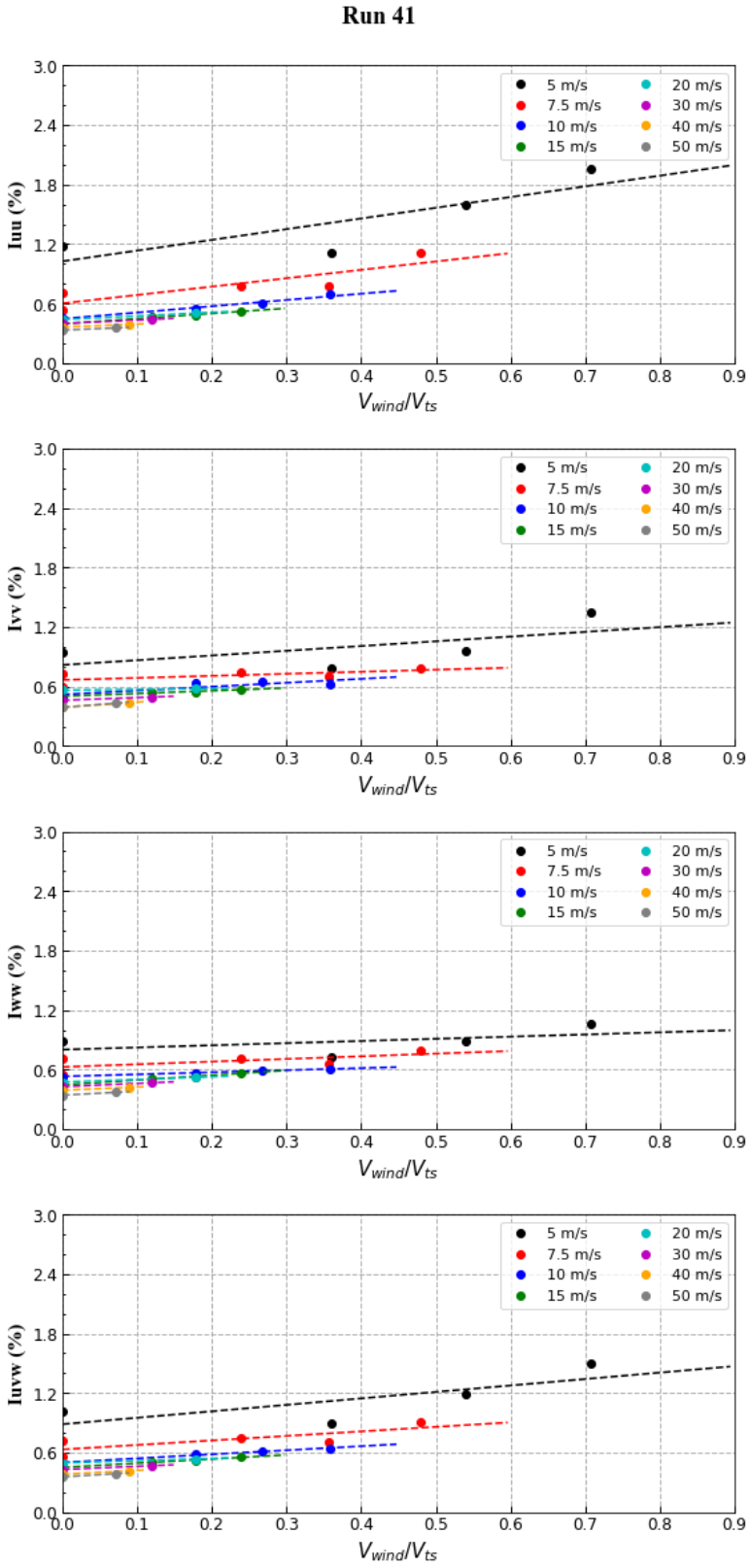


Fig. 37(a). Test section centerline turbulence for yaw = –90 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s < V_{ts} < 50 m/s.

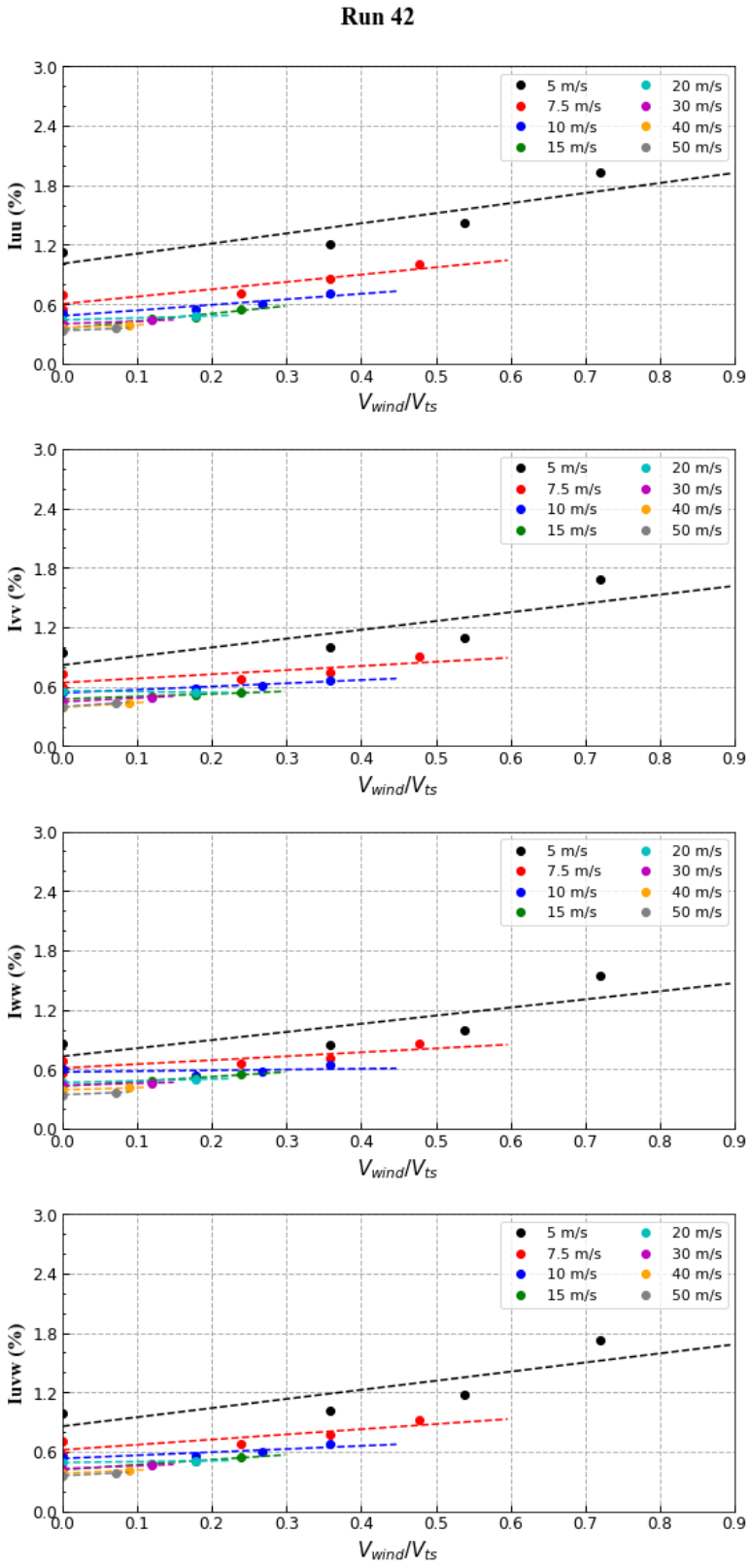


Fig. 37(b). Test section centerline turbulence for yaw = –60 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s < V_{ts} < 50 m/s.

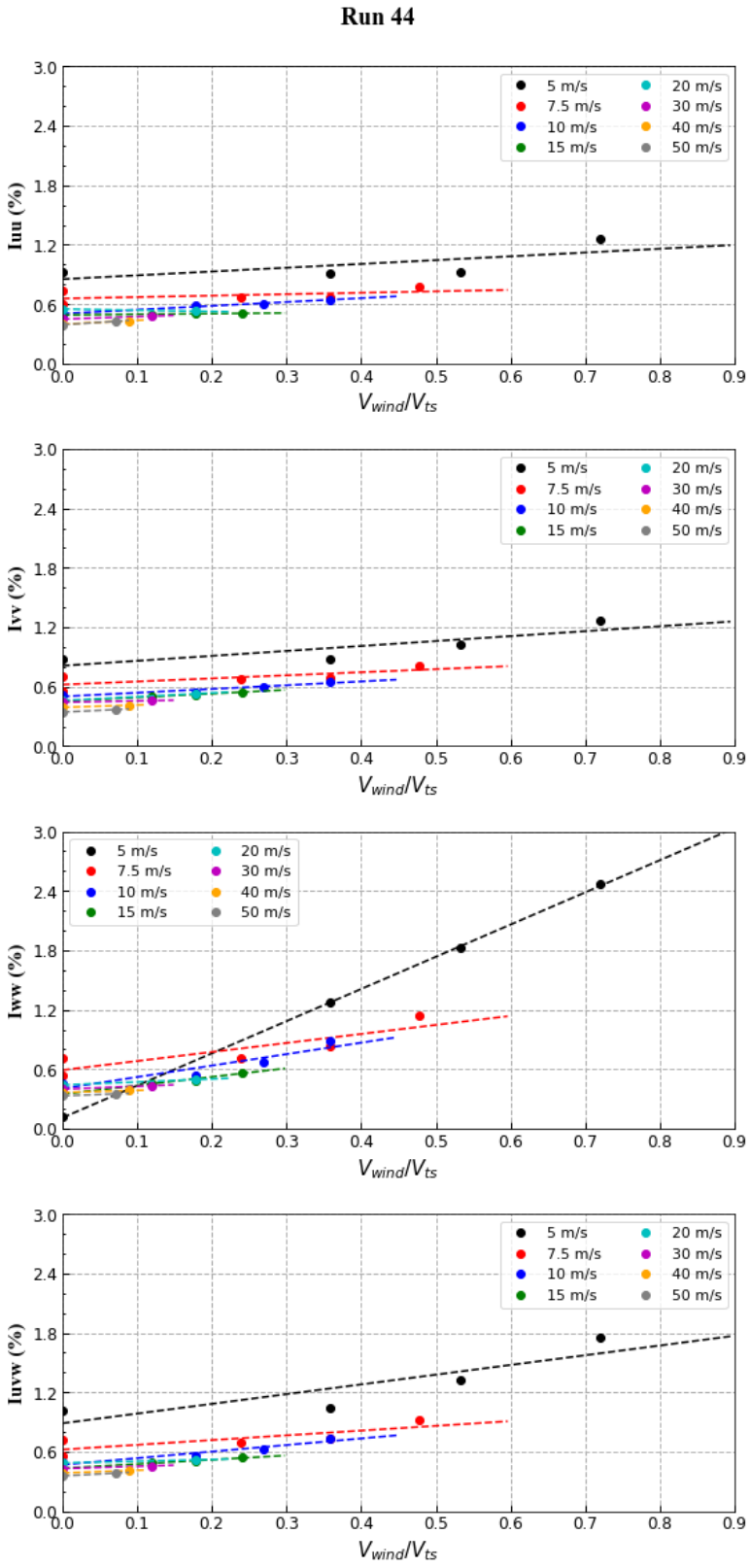


Fig. 37(c). Test section centerline turbulence for yaw = –30 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s < V_{ts} < 50 m/s

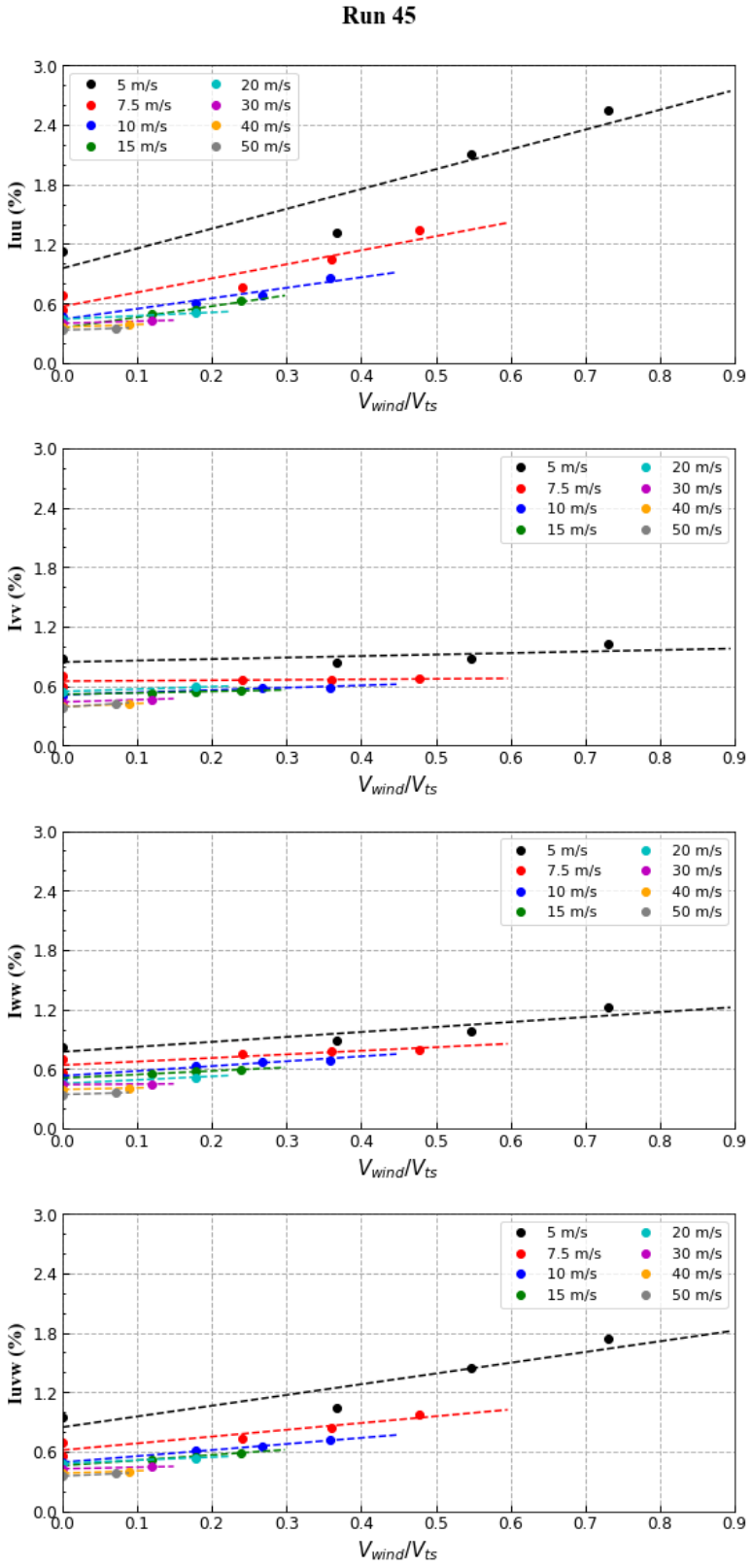


Fig. 37(d). Test section centerline turbulence for yaw = 0 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s < V_{ts} < 50 m/s

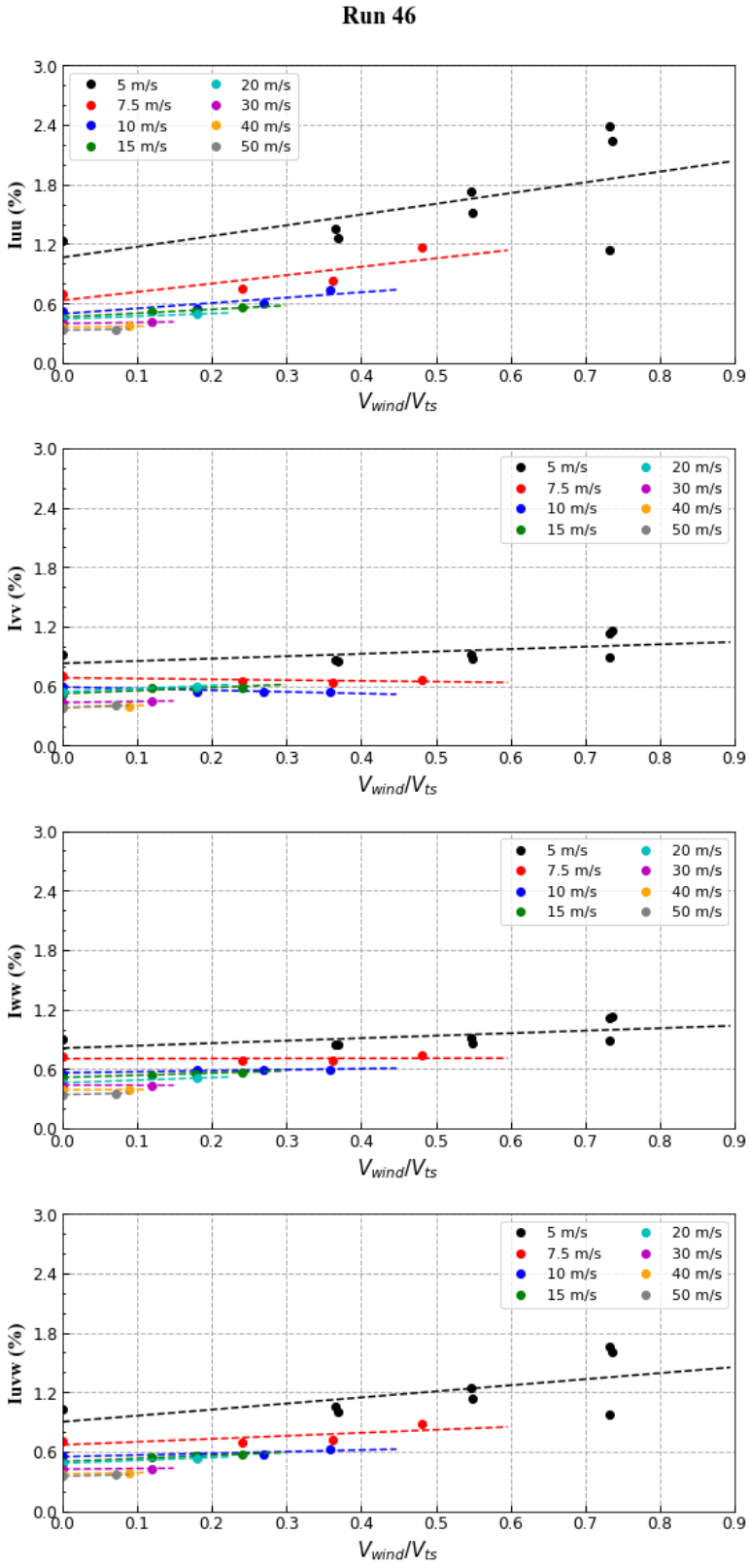


Fig. 37(e). Test section centerline turbulence for yaw = 30 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s $< V_{ts} <$ 50 m/s

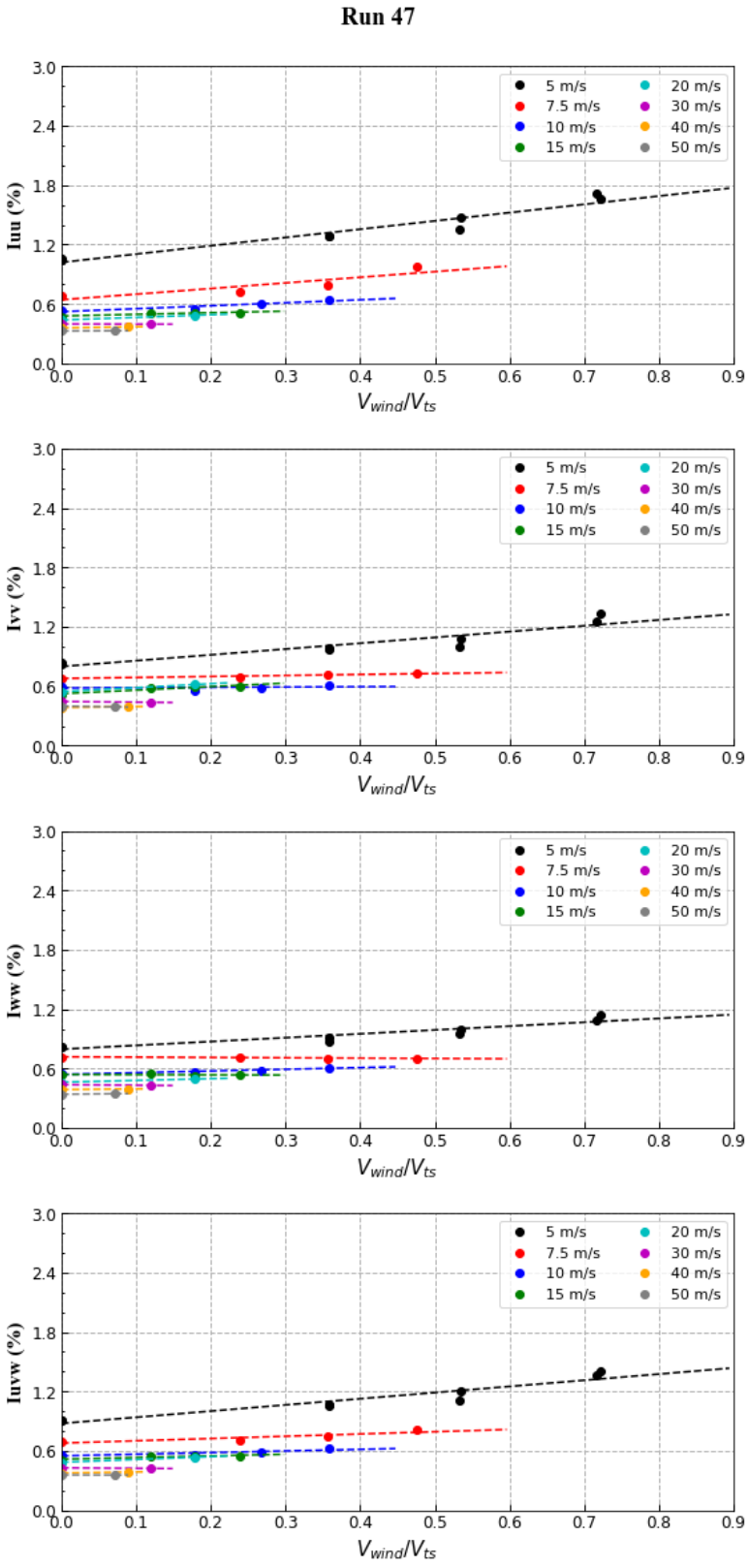


Fig. 37(f). Test section centerline turbulence for yaw = 60 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s < V_{ts} < 50 m/s

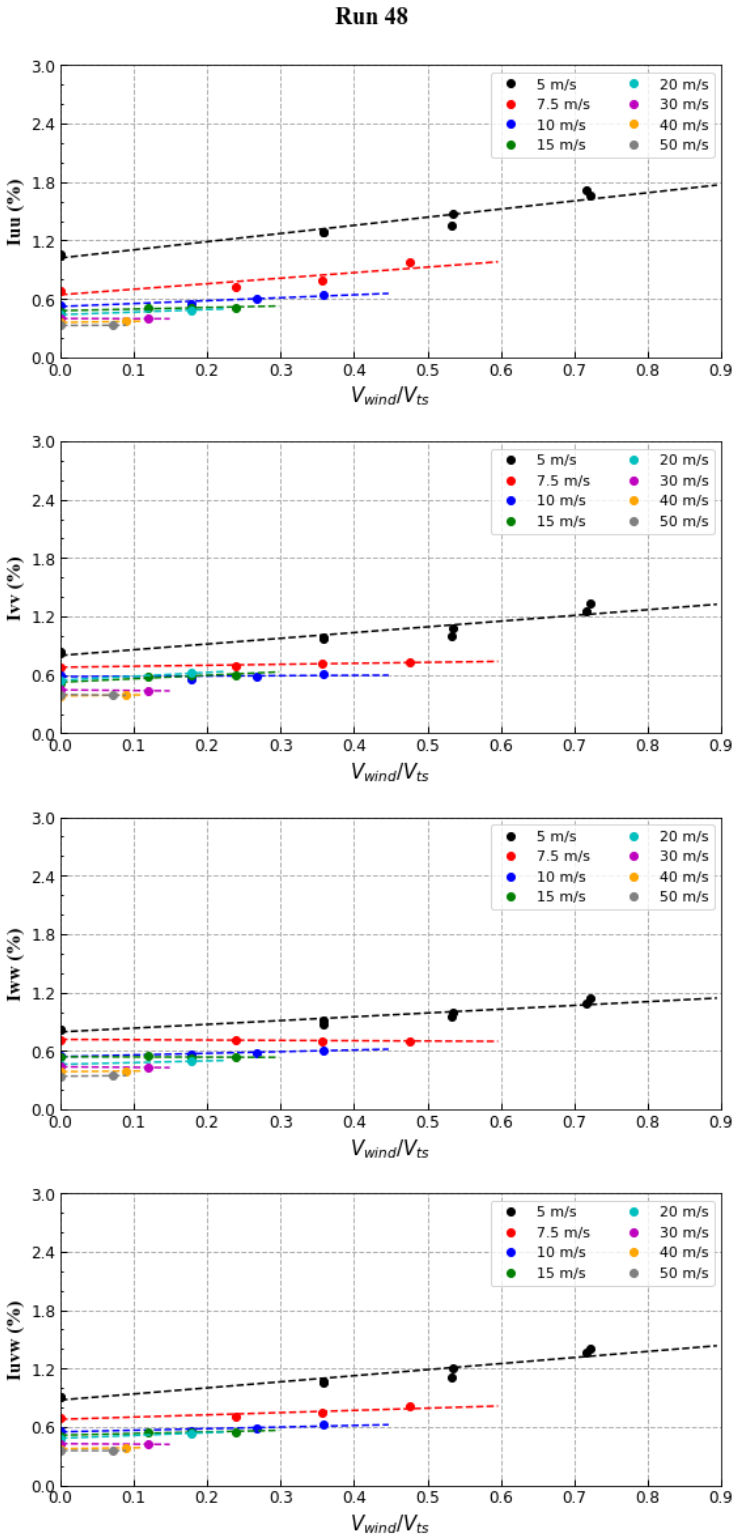


Fig. 37(g). Test section centerline turbulence for yaw = 90 deg, no buildings.
$0 < V_{wind} < 8$ mph, 5 m/s $< V_{ts} <$ 50 m/s

Figure 37. Inlet performance—test section centerline turbulence.

Measurements of test section centerline turbulence are presented for $0 < V_{wind} < 8$ mph and 5 m/s $< V_{ts} < 50$ m/s. For test section velocities of 5 m/s, the optimal curve fit may not be linear. This is to be expected. For a test section velocity of 5 m/s, and the official contraction ratio of 5, an induced velocity at the inlet plane of only 1 m/s or 3.28 ft/sec (197 fpm) is implied. Variability in recirculation inside the NFAC 80x120 test section becomes important as the recirculation velocity approaches the induced velocity at the inlet plane.

Figure 37 should be compared with equivalent data from the full-scale facility presented earlier in Figure 17. The full-scale facility showed that test section *centerline* turbulence intensities are independent of external wind for $V_{ts} > 90$ knots (46.3 m/s). The same is certainly indicated at model scale. Model-scale measurements further indicate that test section centerline turbulence is independent of atmospheric wind for test section velocities of 10 m/s or greater. Model-scale measurements also indicate that the primary determinant of test section centerline turbulence is the test section velocity.

Figure 38 presents the same test section centerline turbulence measurements as Figure 37, plotted to more clearly identify dependence of centerline turbulence on yaw angle. Duplicate measurements from Run 39 at yaw = 0 degrees have also been added to test repeatability. If V_{ts} less than 10 m/s are ignored in Figure 38, then centerline I_{uu}, I_{vv}, and I_{ww} all show very little sensitivity to yaw angle (external wind direction).

Data presented in Figures 37 and 38 are limited to the maximum wind speed at the inlet available from the six-blower array running at maximum speed, namely 8 mph. However, each linear least-squares curve fit in Figure 37 is sufficiently good so that extrapolation to an absolute maximum expected wind speed of 20 mph is believed to be a valid operation in order to extend the correlation to the full-scale operational envelope. This operation only appears to be unreliable for $V_{ts} = 5$ m/s, but a test section velocity of 5 m/s (approximately 10 knots) is an unusually low test condition for the full-scale facility. Figure 39 shows test section centerline turbulence for yaw = 0 degrees (no buildings) with each linear curve fit extrapolated to $V_{wind} = 20$ mph (the maximum ambient wind speed anticipated at the full-scale 80x120 inlet). Data from two separate runs (Runs 118 and 120) are included in each subplot of Figure 39 to demonstrate measurement repeatability.

Test section centerline turbulence is valuable information to have, but test section cross-sectional area surveys provide much more information, namely variation of *U*, *V*, *W*, *Iuu*, *Ivv*, and *Iww* not just at the test section centerline but throughout the test section. Complete area surveys of flow quality in the test section are provided in Figure 40 for maximum wind (8 mph) and no buildings with a test section velocity of 20 knots for –90 < yaw < +90 degrees. The test section velocity of 20 knots (10 m/s) is chosen because measurements indicate that test section flow quality decreases at 20 knots and below, and there is little point taking a lot of data at $V_{ts} = 50$ knots or $V_{ts} = 100$ knots where the test section turbulence level is low and the flow is uniform across the test section (flow quality at yaw = –29 degrees for $V_{ts} = 50$ knots is discussed below).

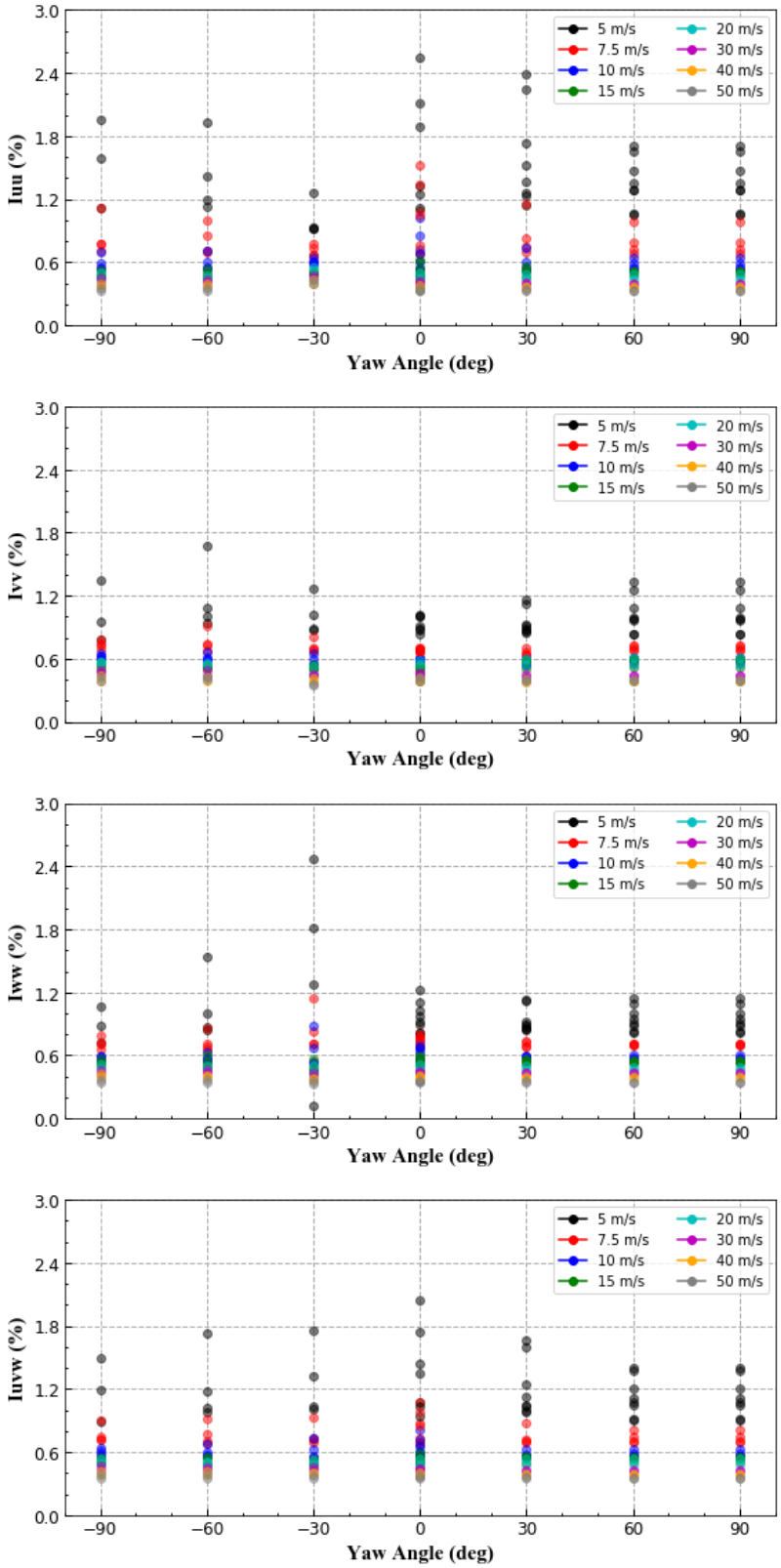


Figure 38. Test section centerline turbulence as a function of yaw angle. No buildings, $0 < V_{wind} < 8$ mph, 5 m/s < V_{ts} < 50 m/s (Runs 39, 41-48).

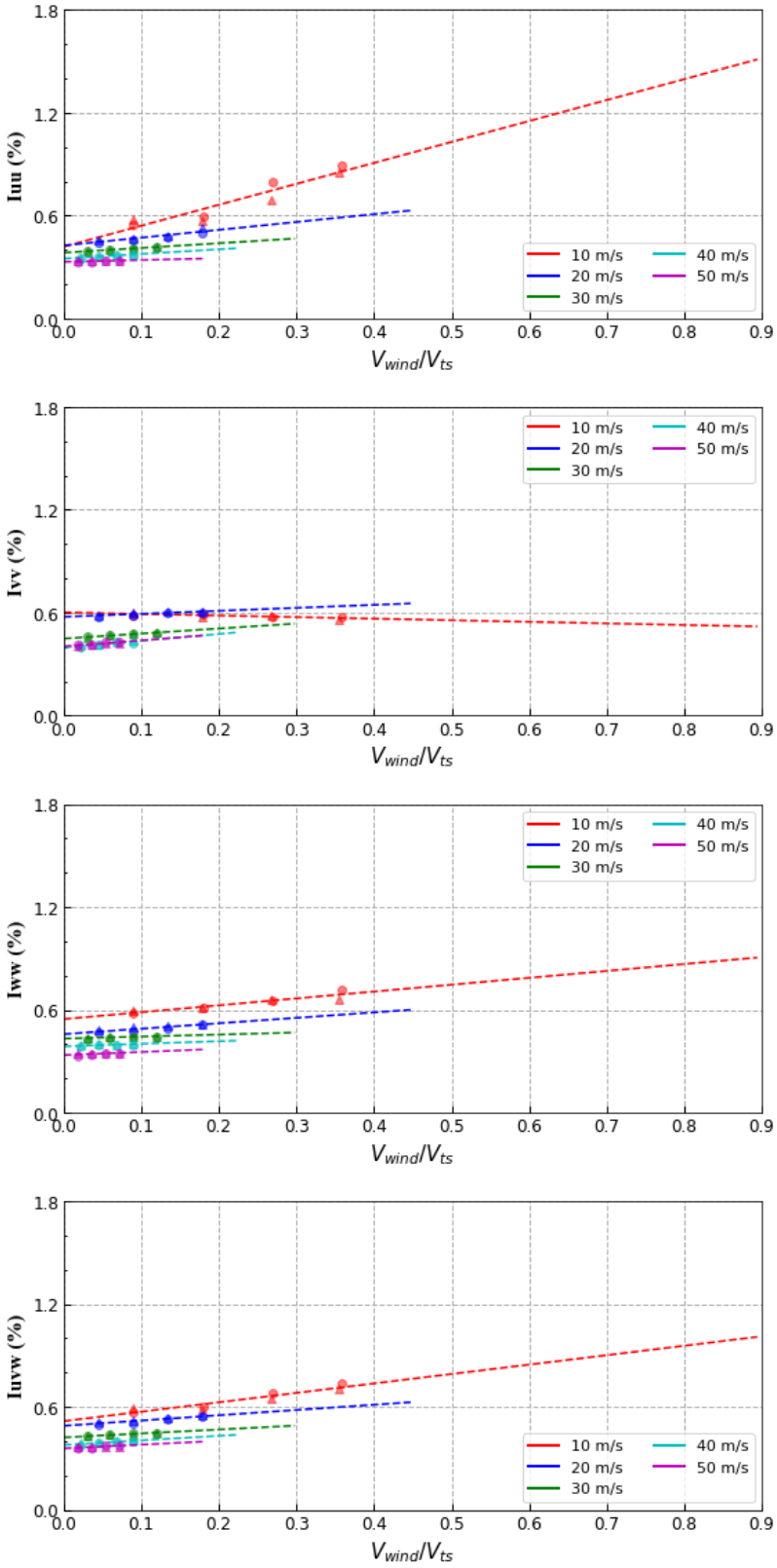


Figure 39. Test section centerline turbulence for yaw = 0 deg, no buildings (Runs 118, 120). $0 < V_{wind} < 8$ mph, 10 m/s $< V_{ts} <$ 50 m/s.

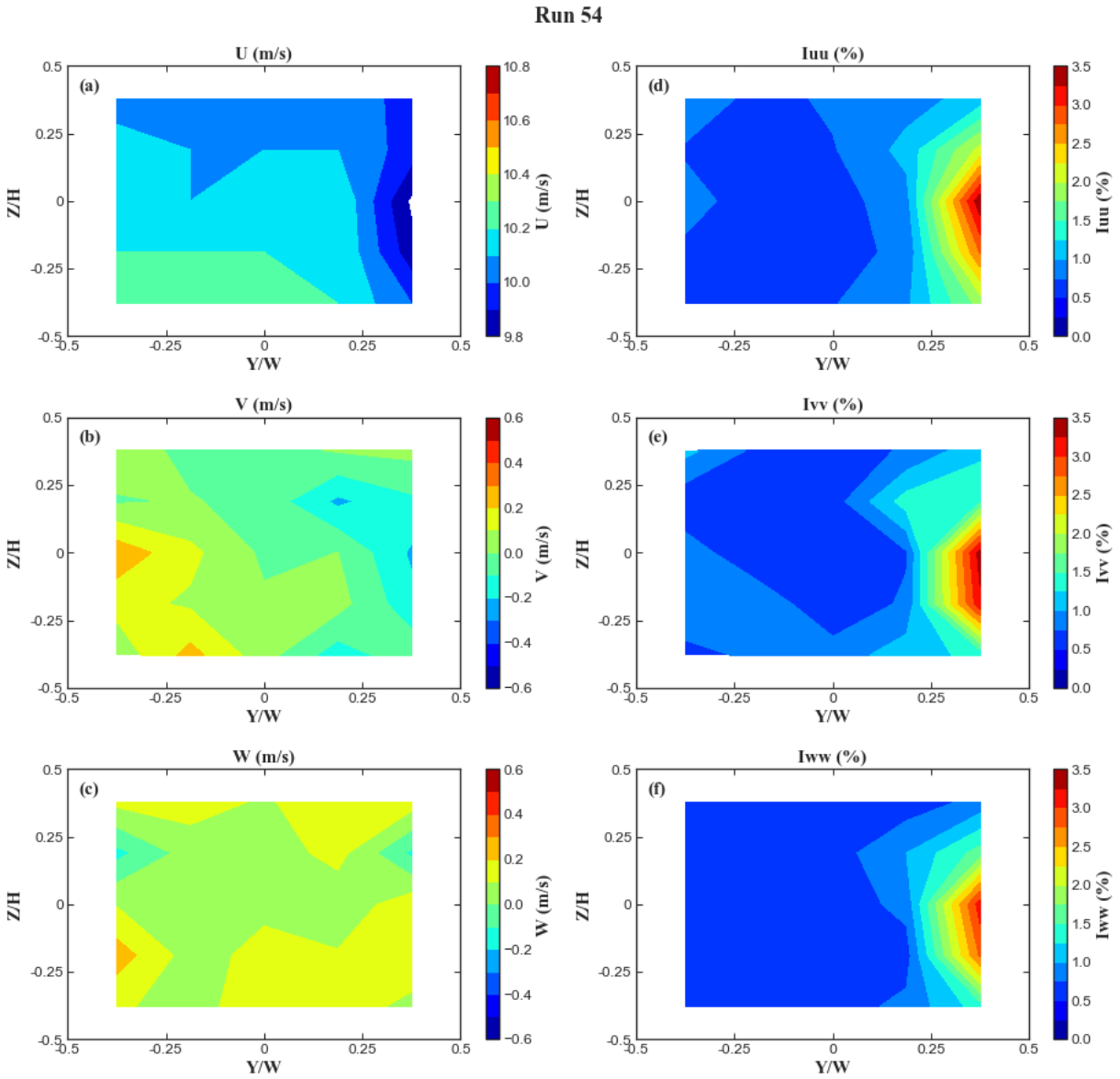


Fig. 40(a). Test section flow quality for yaw = –90 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

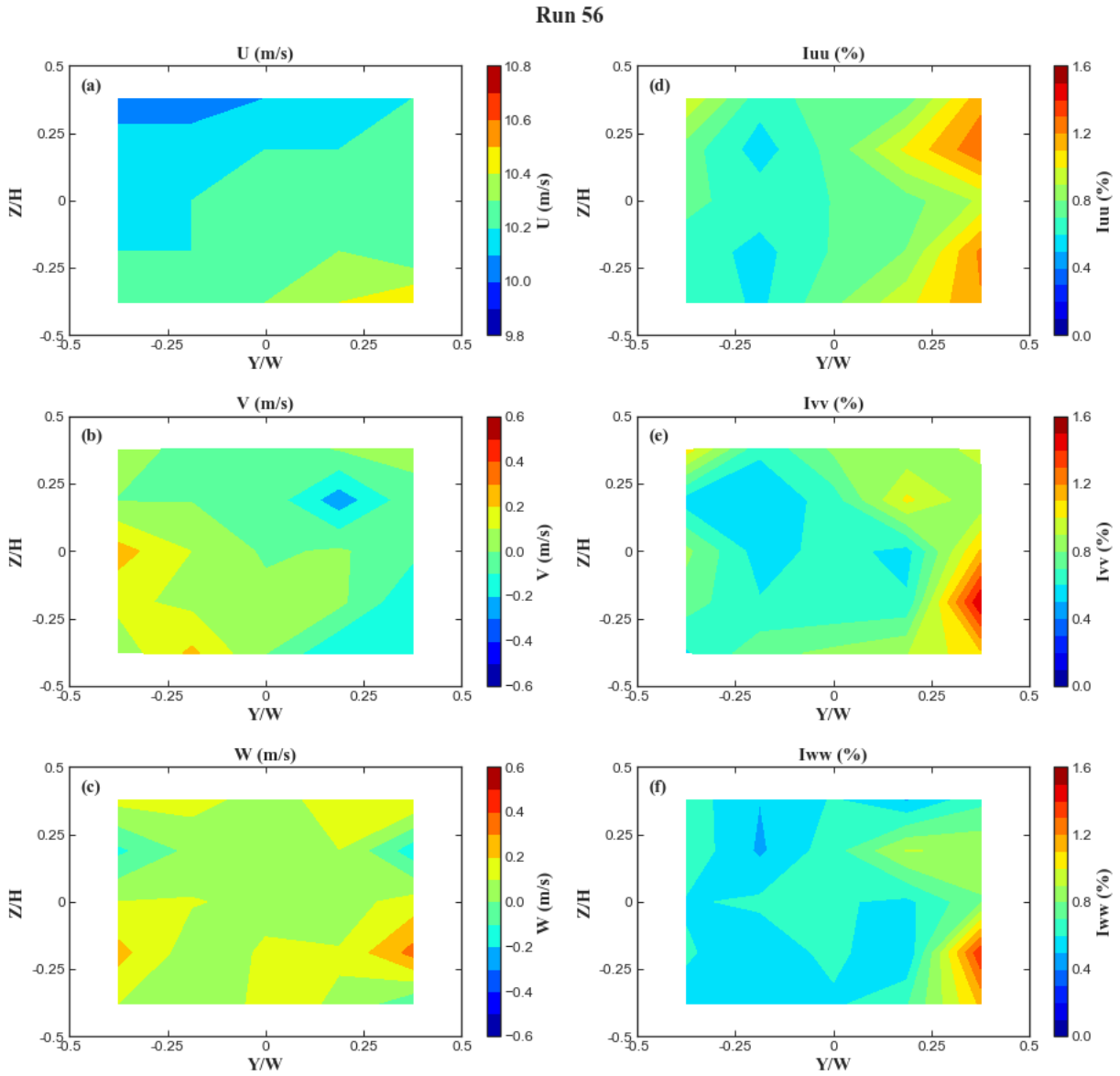


Fig. 40(b). Test section flow quality for yaw = –60 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

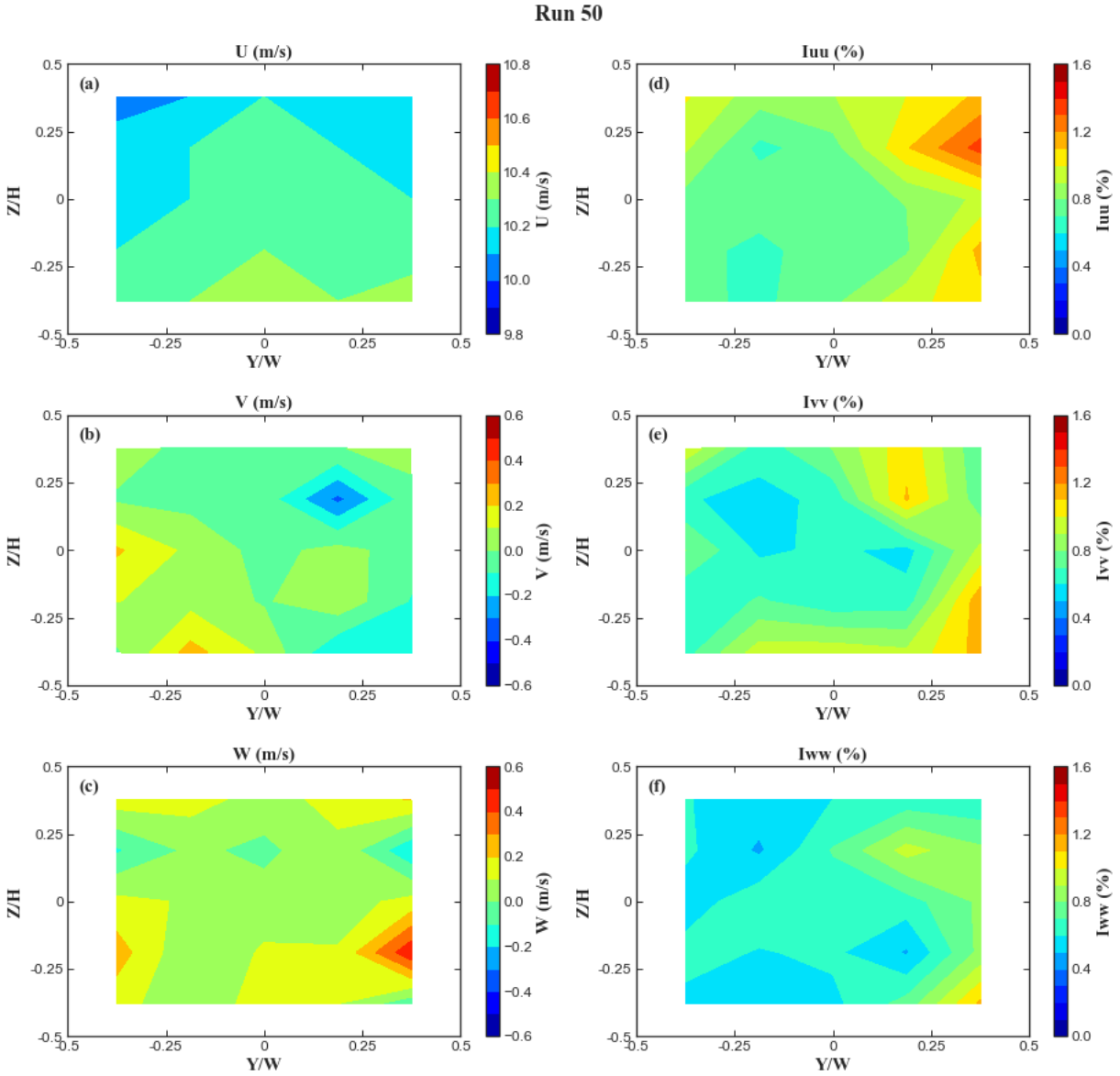


Fig. 40(c). Test section flow quality for yaw = –30 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

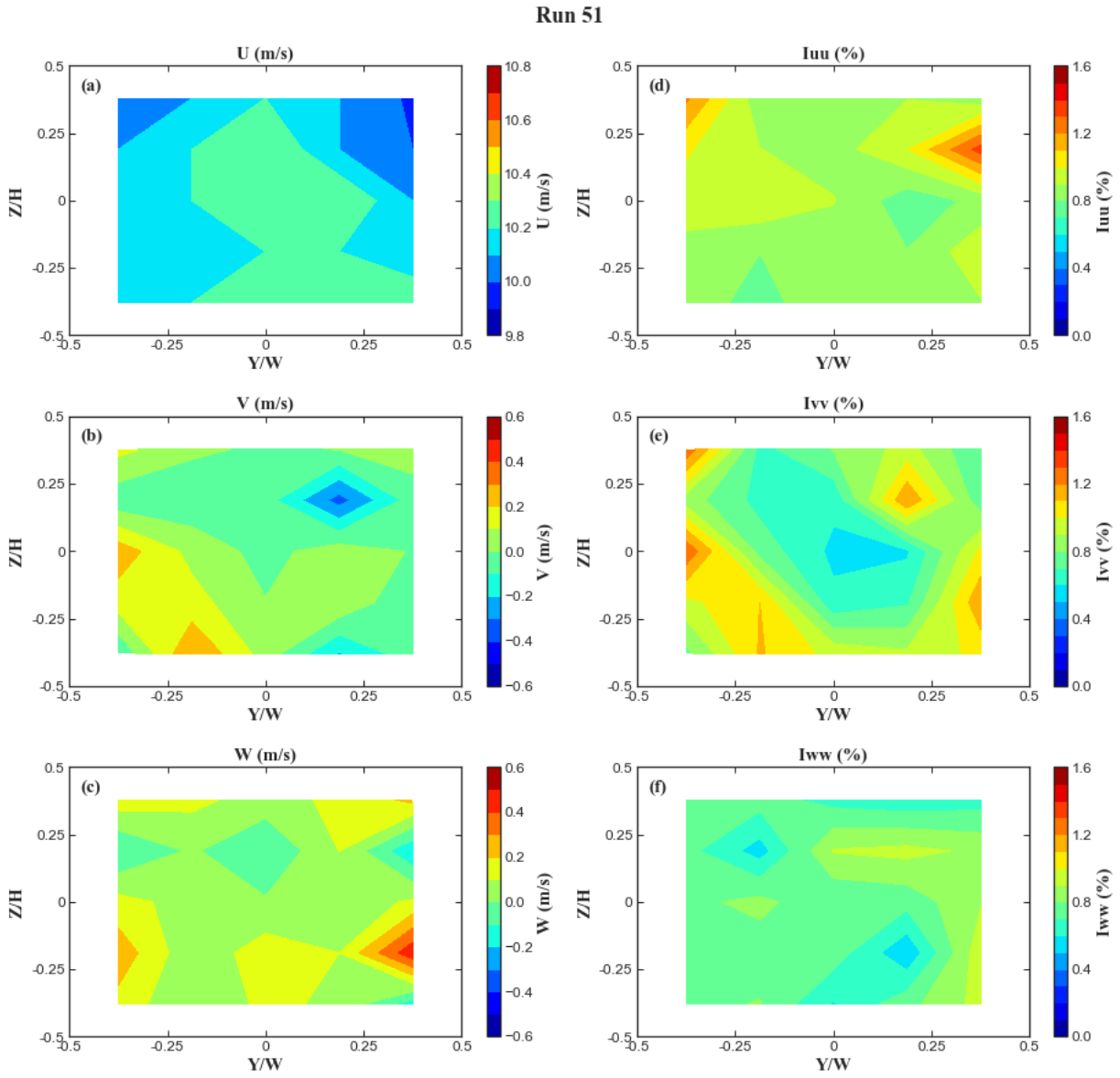


Fig. 40(d). Test section flow quality for yaw = 0 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

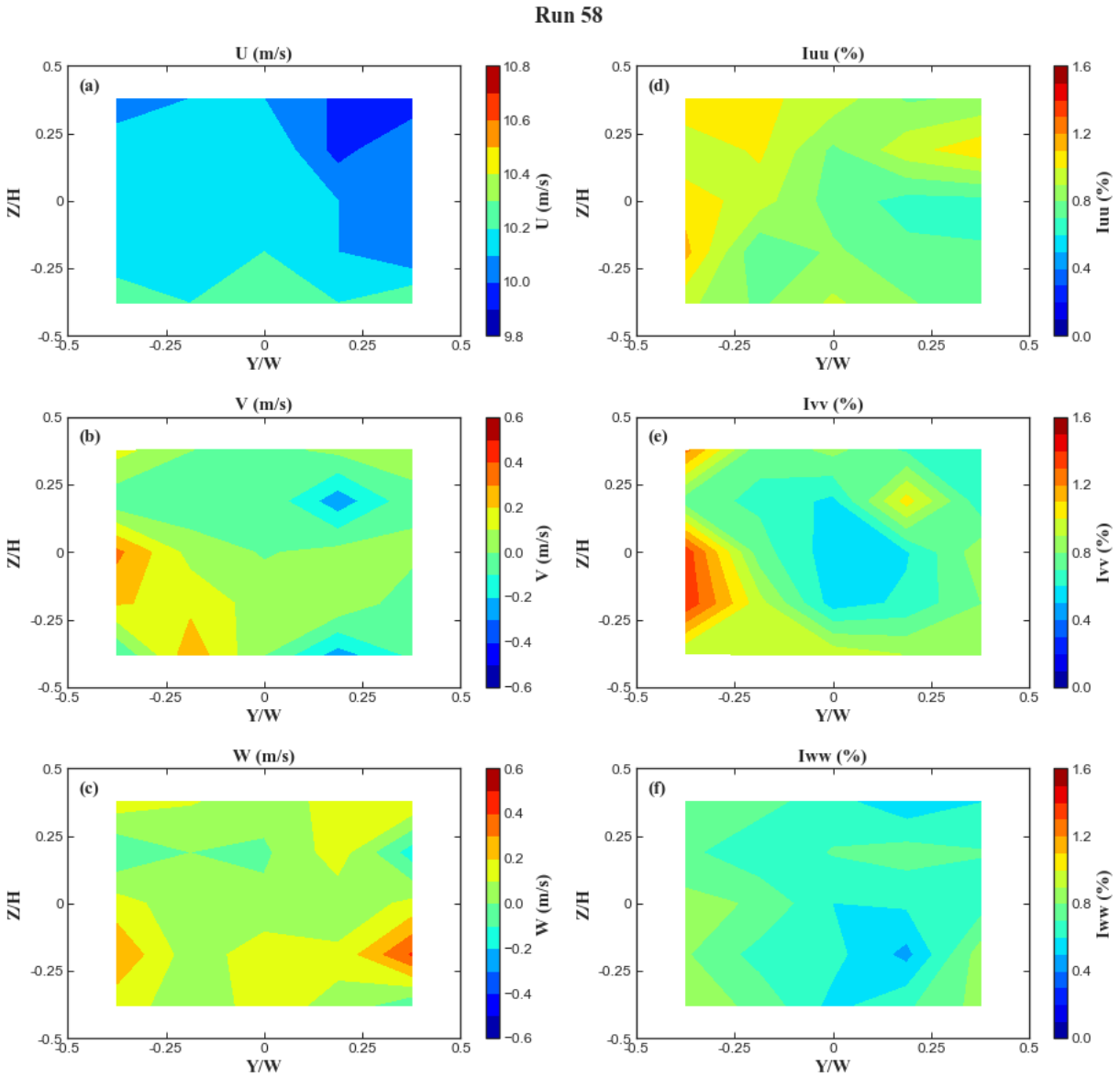


Fig. 40(e). Test section flow quality for yaw = 30 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

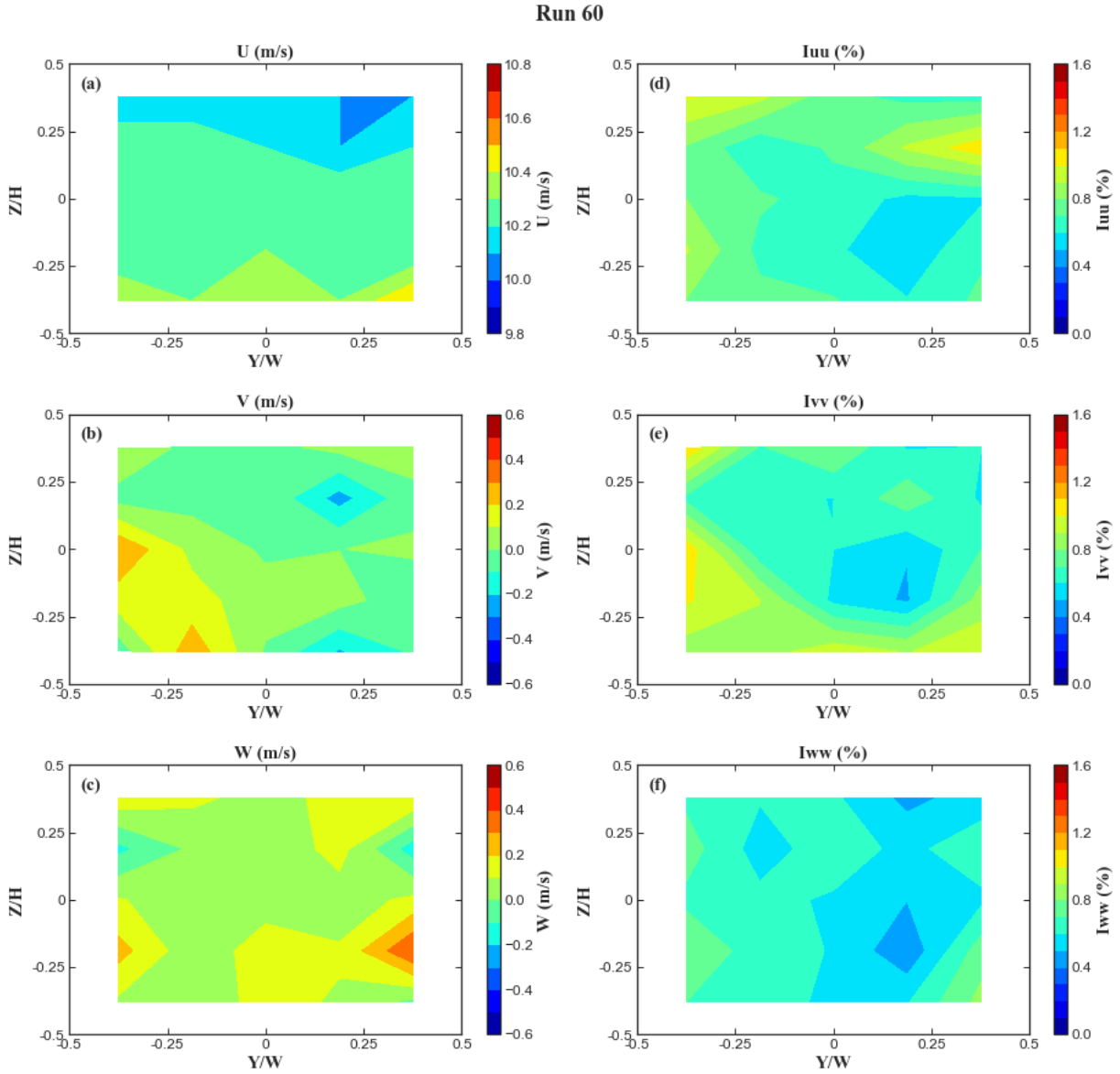


Fig. 40(f). Test section flow quality for yaw = 60 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

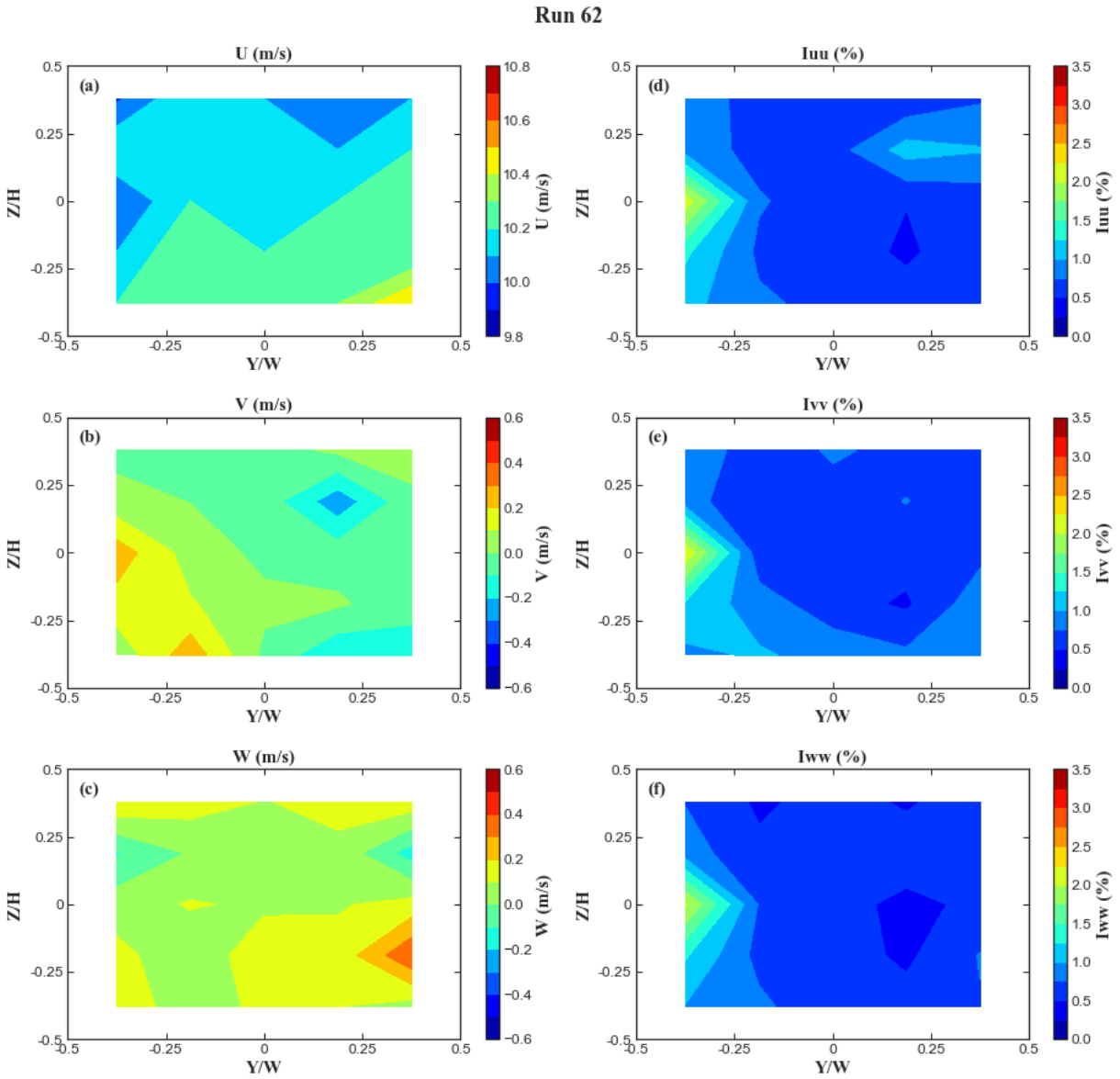


Fig. 40(g). Test section flow quality for yaw = 90 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

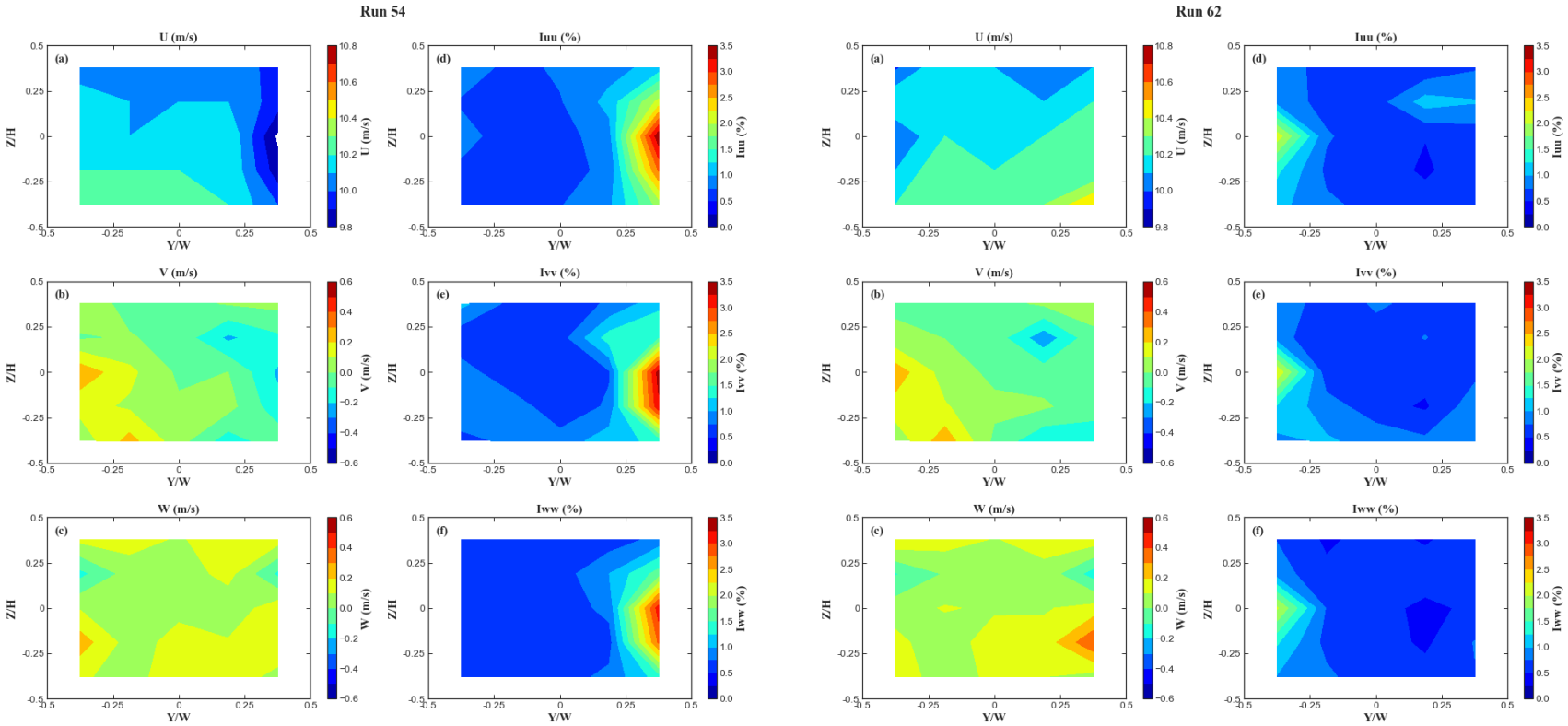
Figure 40. Test section flow quality.

Figure 41 provides a simple visual comparison between flow quality at –90 and +90 degrees yaw. The behavior of the inlet should be symmetrical with respect to wind direction (yaw angle) assuming the six-blower jet flow field was symmetrical and without skew (Fig. 32(c)). Figure 41 indicates that mean velocity components remain uniform (U = 10.0 ±0.2, V = W = 0 ±0.2) but a departure from symmetry is observed in the turbulence components. This is likely due to the ambient wind skew of 3.5 feet in 61.3 feet, or roughly 3 degrees. Ambient wind skew results in effective yaw angles of –93 degrees and +87 degrees respectively, resulting in an unplanned 6-degree difference in effective yaw angle between the two test conditions. Note that for yaw = –90 degrees, the upwind side of the test section has a noticeable reduction in U adjacent to the wall, and all three turbulence components exhibit a steep increase. The upwind half of the inlet splayed vanes offer an easy path for flow into the inlet, whereas the downwind half of the inlet offers a much more convoluted path into the inlet. This indicates that vane splay is not responsible for the increased turbulence adjacent to the test section side wall shown in Figure 41. A more likely explanation is that the flow separates from the bell-mouth on the upwind side of the inlet at an onset flow angle of 93 degrees. A yaw angle of 90 degrees exhibits a somewhat smaller turbulence increase on the upwind side of the inlet because the effective yaw angle is only 87 degrees.

Effect of Google Campus on Test Section Flow Quality

The prior discussion focused on the "no buildings" geometry at 20 knots test section velocity. This section focuses on yaw = –24 to –34 degrees, which is expected to carry the Google Campus buildings wake towards the 80x120 inlet. Note that the Googleplex width, viewed from the center of the 80x120 inlet, is in excess of 24 feet at 1/50th-scale, whereas the inlet width is only 7.24 feet at model scale. There is little doubt that the wake from the Google Campus will completely envelop the inlet if the wind direction is appropriate. The main uncertainty lies in precisely what wind direction will prove to be the "worst" as far as resulting test section flow quality. Hoping to answer this question, a small range of yaw angles about the central value of yaw = –29 degrees were chosen. Recall that the exact geometry of the 2D silhouettes was valid for yaw = –29 degrees. This neglects any lateral component of ambient wind from the six fan blowers at the location of the silhouettes.

The first set of measurements focused on test section *centerline* turbulence for the single yaw angle of –29 degrees for $0 < V_{wind} < 8$ mph and $5 < V_{ts} < 50$ m/s. Figure 42(a) presents data for I_{uu}, I_{vv}, $I_{ww,}$ and I_{uvw} for the case of "no buildings." The "pre-2019 buildings" configuration refers to the MVC plus NASA Ames buildings (N258 + trailers) and is described in Figure 42(b) showing no difference for V_{ts} = 10 m/s and above. Comparing Figure 42(b) with 42(a), for V_{ts} = 5 m/s the NASA Ames buildings clearly cause an increase of about 25 percent in I_{uu} but the other centerline turbulence components are unchanged. At higher test section velocities, the NASA Ames buildings cause no measurable change in test section centerline turbulence. The effect of adding the Google Campus buildings is shown in Figure 42(c). *All* turbulence components show a reduction in relative turbulence intensity on the test section centerline caused by the addition of the Google Campus to the pre-2019 configuration. This was totally unexpected. However, this comparison between upwind building configurations is limited to the test section centerline. Full test section area surveys are needed to confirm this result and provide additional information.



Run 54: Yaw = –90 deg.

Run 62: Yaw = +90 deg.

Figure 41. Comparison of test section flow quality between yaw = –90 and +90 deg, no buildings.
Wind = 8 mph, V_{ts} = 20 kts, pilot view.

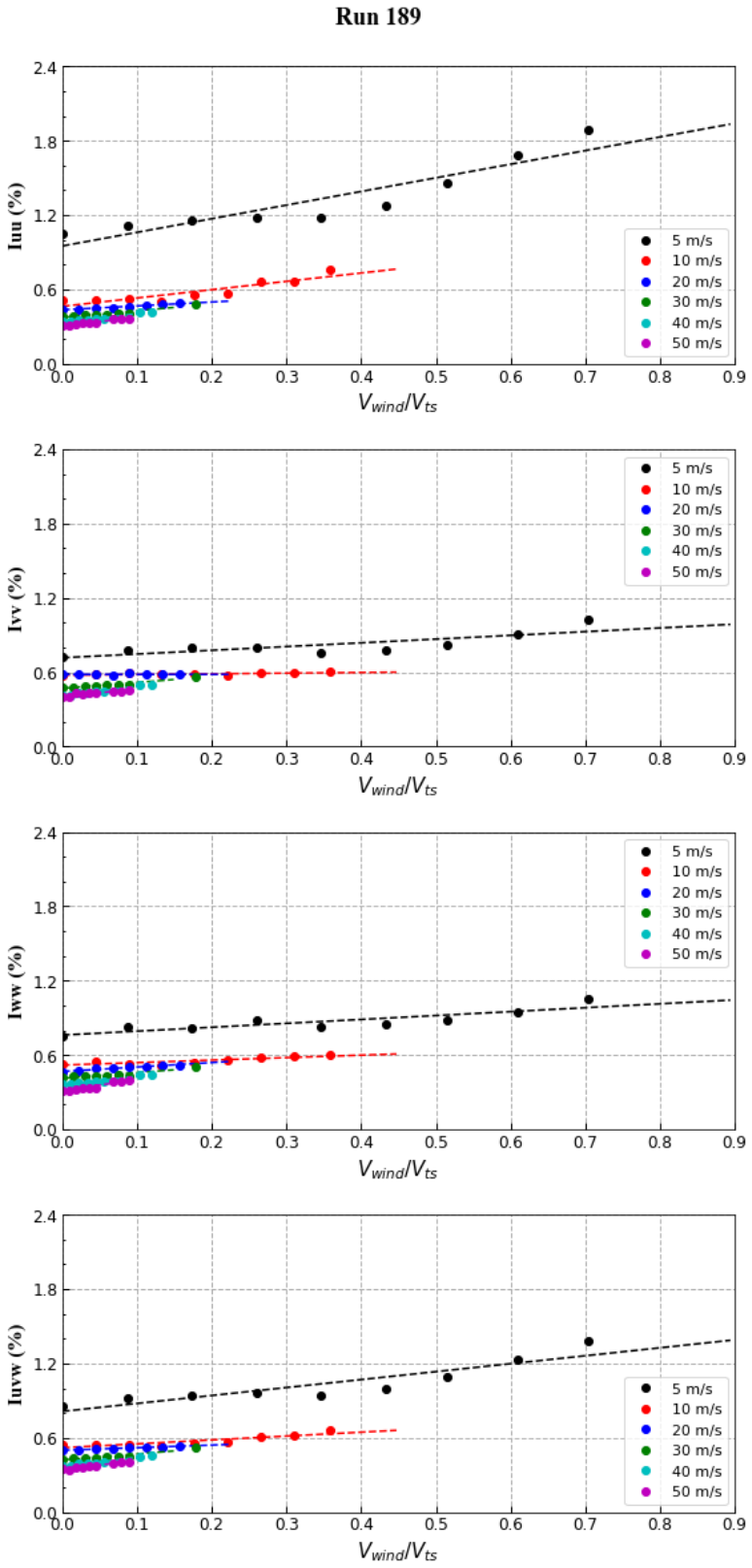


Fig. 42(a). Test section centerline turbulence for yaw = –29 deg, no buildings, Run 189.

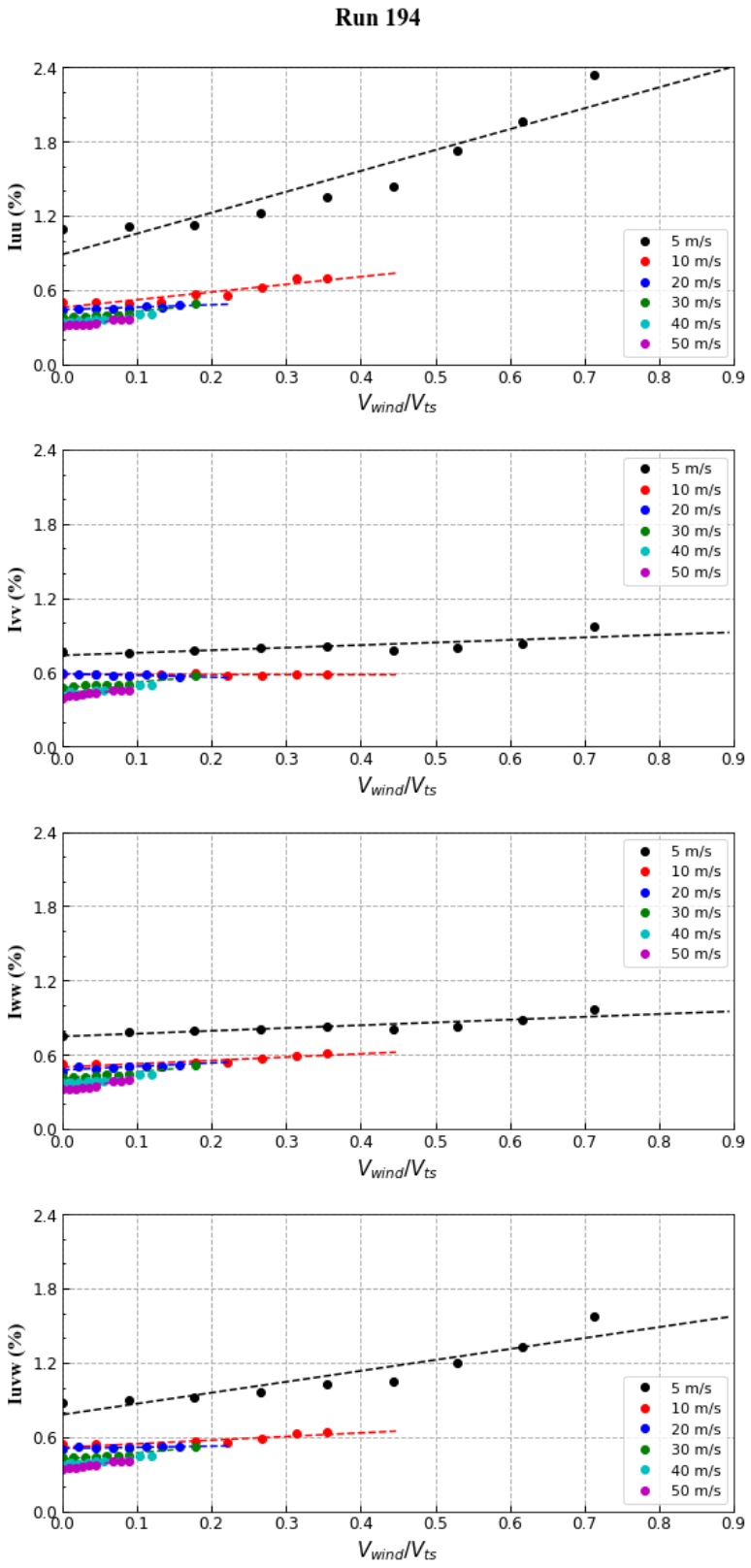


Fig. 42(b). Test section centerline turbulence for yaw = –29 deg, pre-2019 buildings, Run 194.

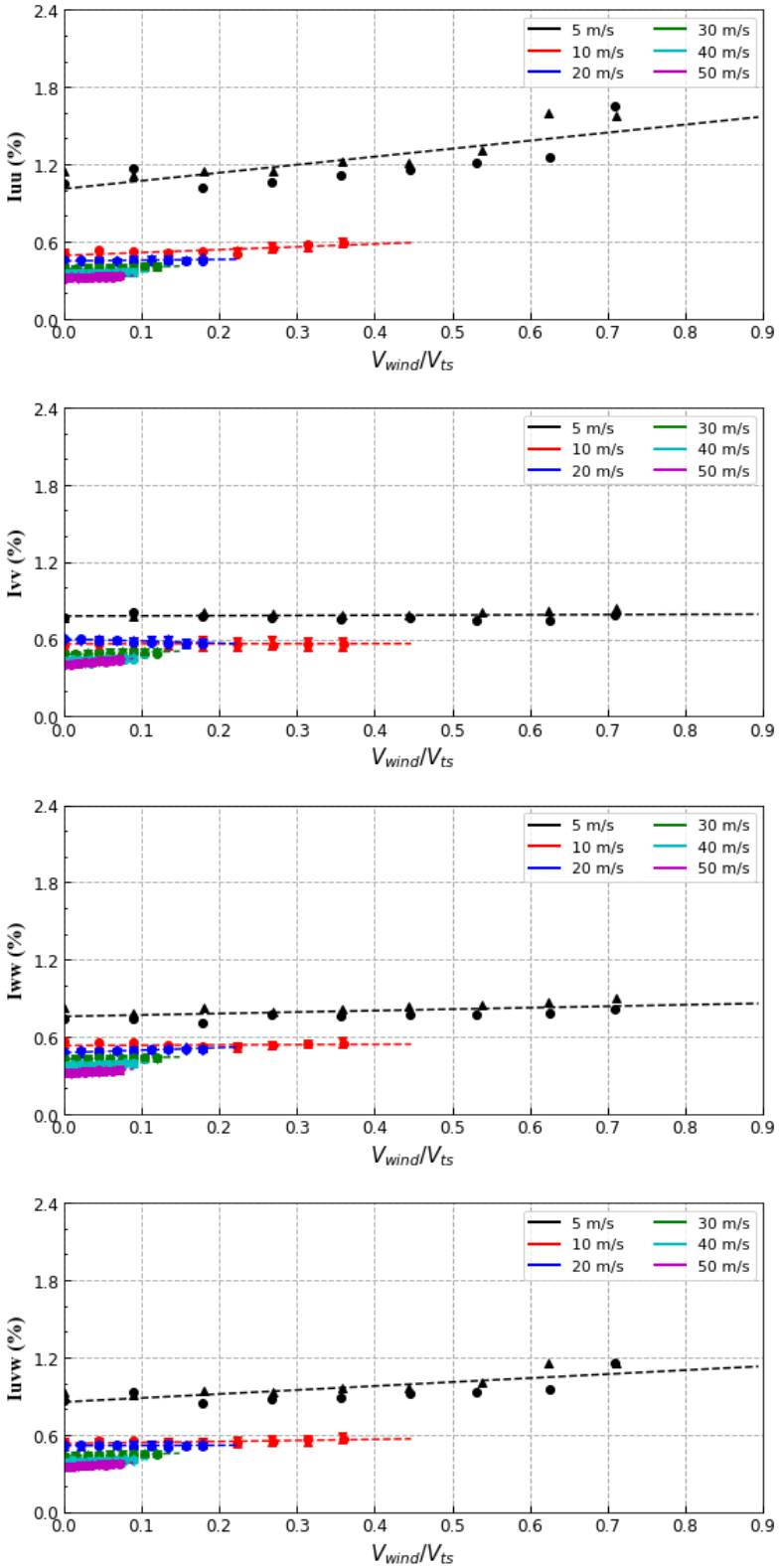


Fig. 42(c). Test section centerline turbulence for yaw = –29 deg, all buildings.

Figure 42. Test section centerline turbulence.

The area surveys in this report start with V_{wind} = 8 mph and yaw = –29 degrees for V_{ts} = 50 knots, a high-speed test section velocity that is known to provide good test section flow quality (test section turbulence has already been shown to be primarily determined by test section velocity). Figure 43(a) shows the test section survey for the "no buildings" case, and Figure 43(b) provides corresponding measurements for "pre-2019 buildings." Note that "pre-2019 buildings" refers to NASA plus MVC buildings, but for yaw = –29 degrees the wake from the MVC will not be entrained into the inlet and therefore plays no role. The wake from the NASA buildings (N258 + trailers) will most definitely be entrained into the 80x120 inlet. Figure 43(c) is a duplicate of Figure 43(b) to simplify the visual comparison with Figure 43(d) and illustrate the effect of adding the Google Campus.

The simple visual, qualitative comparison between the three upwind building configurations for V_{wind} = 8 mph and yaw = –29 degrees for V_{ts} = 50 knots indicates almost no change in either *U*, *V*, *W*, *Iuu*, *Ivv*, or *Iww* resulting from the addition of the NASA buildings ahead of the inlet or the addition of the Google Campus buildings. To provide a *quantitative* indication of any changes in turbulence levels, the mean and standard deviations for each measurement were computed using the 25 individual measurements from which each test section area survey is composed. The results are shown in Table 6, which indicates no meaningful change in test section turbulence between the "no buildings," the "NASA Ames buildings," and the "NASA Ames buildings + Google Campus buildings" for maximum wind (8 mph) with yaw = –29 degrees (wind from the Google Campus location) and V_{ts} = 50 knots (variation of less than 0.02 percent in any component of relative turbulence intensity). The standard deviations are included to provide an indication of the variation of each variable over the 25 grid points covering the test section.

Table 6. Average Test Section Turbulence for Three Upwind Building Configurations.
Yaw = –29 degrees, V_{wind} = 8 mph, V_{ts} = 50 knots.

	No Buildings	**Pre-2019 Buildings**	**Pre-2019 Buildings + Google**
	Run 159	**Run 196**	**Run 173**
Variable	mean, σ	mean, σ	mean, σ
I_{uu} %	.4175, 0.0429	.4126, 0.0375	.3962, 0.0410
I_{vv} %	.5160, 0.0916	.5352, 0.0859	.5128, 0.0882
I_{ww} %	.4654, 0.0449	.4538, 0.0380	.4520, 0.0417
I_{uvw} %	.4697, 0.0496	.4715, 0.0444	.4578, 0.0466

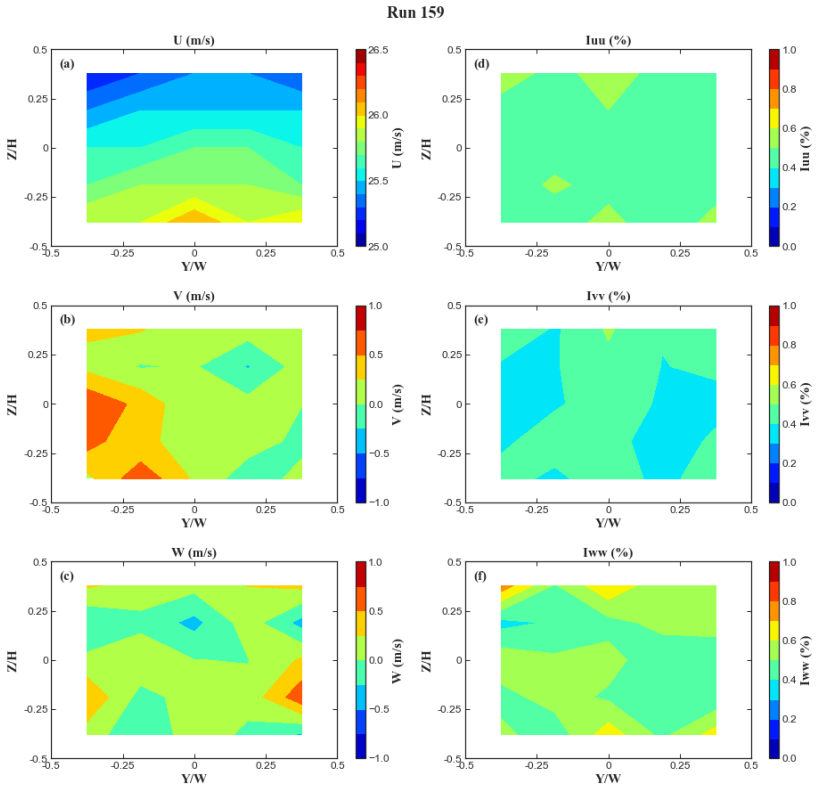


Fig. 43(a). No buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 50 kts.

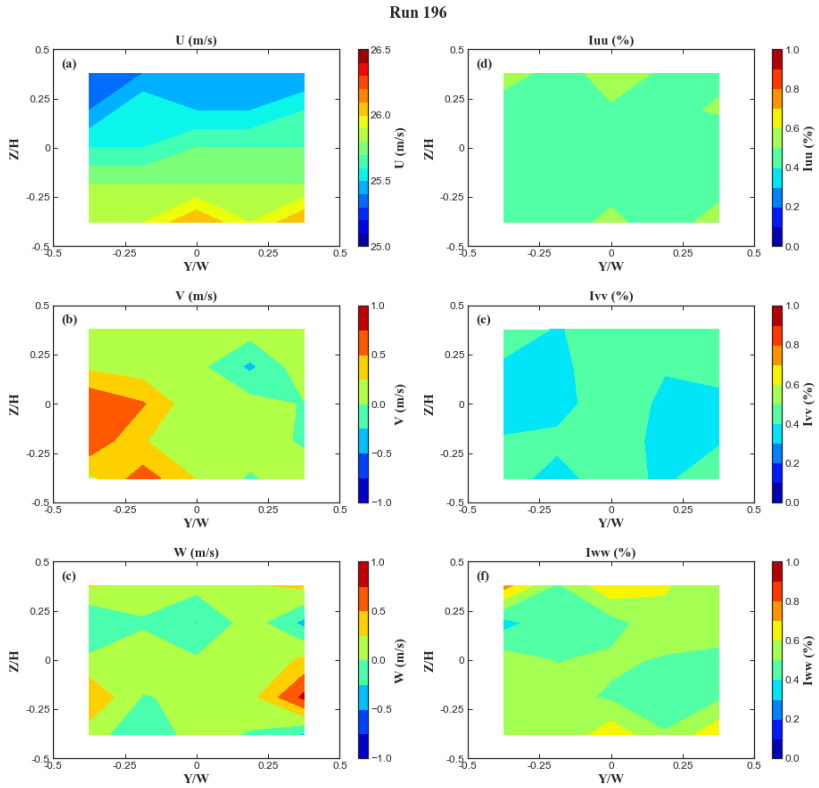


Fig. 43(b). Pre-2019 buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 50 kts.

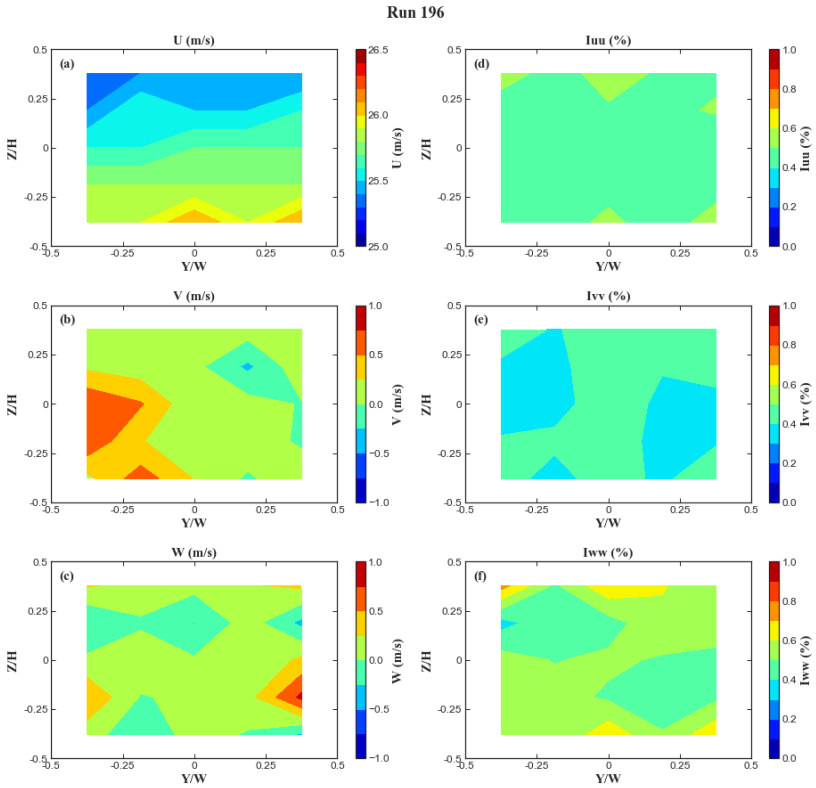


Fig. 43(c). Pre-2019 buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 50 kts.

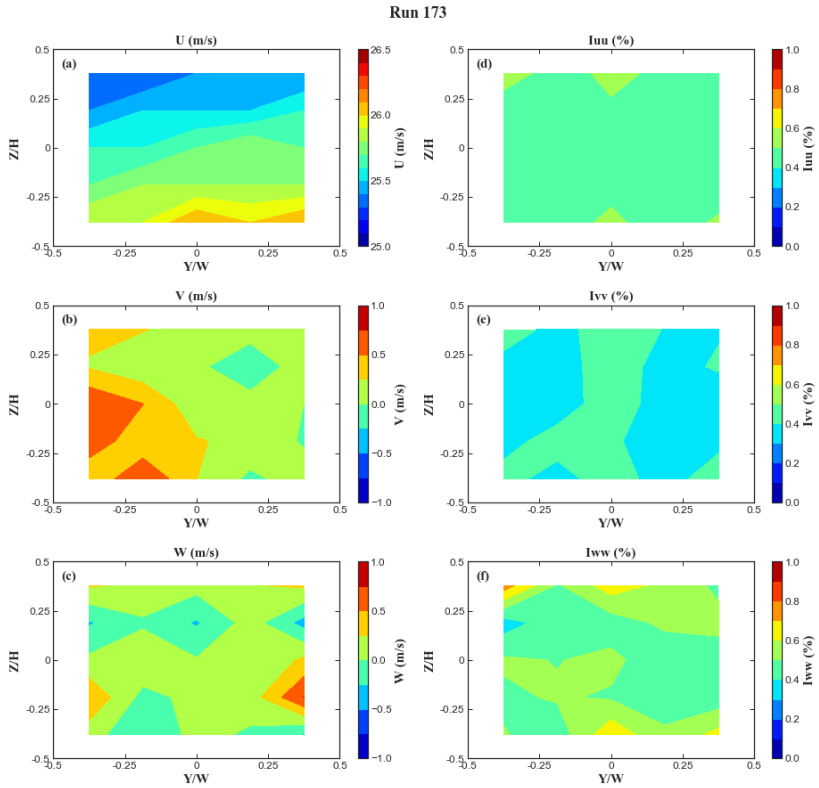


Fig. 43(d). All buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 50 kts.

Figure 43. Test section surveys showing effect of adding Google Campus buildings ahead of NFAC inlet.

Figure 44 presents test section flow quality area surveys for maximum wind = 8 mph and V_{ts} = 20 knots at yaw = –24 degrees. Corresponding information is presented in Figure 45 for yaw = –29 degrees and in Figure 46 for yaw = –34 degrees. There is no interest in making a direct comparison with any full-scale test section turbulence measurements (Ref. 6) because the simulated ambient wind is not expected to be representative of atmospheric winds ahead of the full-scale facility inlet. Instead, interest is focused on the *change* in test section flow quality that can be assigned to the presence of the pre-2019 buildings or the presence of the Google Campus buildings. Once again, the mean value for each turbulence component is evaluated over the 25-point survey grid, and these results are plotted in Figure 47. Even for a wind tunnel test section speed of 20 knots, the presence of the NASA Ames buildings shows only small changes in test section turbulence, close to zero, depending on wind direction. These measurements for V_{ts} = 20 knots indicate that test section turbulence in the 80x120 wind tunnel is slightly reduced by the presence of the Google Campus. The presence of the Google Campus produces much larger changes in test section turbulence, all favorable, over the yaw angle range tested. By far the largest change occurs in I_{uu}, which registers a reduction in relative turbulence intensity, I_{uu}, of –0.22 percent.

The favorable reduction in test section turbulence due to the upwind presence of the Google Campus shown in Figure 47 was totally unexpected, as discussed earlier. One possible explanation is proposed. For simplicity, assume that the atmospheric wind is directed towards the inlet, parallel to the wind tunnel centerline. Assume that the wind speed is uniform everywhere ahead of the inlet. Now consider all the flow inside the test section to be represented by a single stream tube containing a known volumetric flow rate defined by the area of cross section of the test section and the test section velocity, then one can draw the limits of that same stream tube ahead of the inlet where the uniform wind speed is also known. Now add the Google Campus at the appropriate distance ahead of the inlet. The Campus width is approximately three times wider than the wind tunnel inlet, and the Campus height is approximately equal to the inlet height. The wake of the Campus therefore starts out approximately three times larger than the inlet, and by the time this wake reaches the inlet it will be many times larger than the inlet. The wake must envelop the inlet. It is known from Alnor probe measurements that the velocity defect in the wake of building G1 alone is approximately 30 percent of the local ambient velocity by the time the wake reaches the inlet. For simplicity, assume this velocity defect is uniform everywhere ahead of the inlet. The stream tube ahead of the inlet must therefore be 30 percent larger in cross-sectional area than for the uniform wind ahead of the inlet in order to satisfy conservation of mass and match the flow rate present in the test section. This implies that the stream tube in the wake of building G1 must suffer an *additional* 30 percent contraction ahead of the inlet compared to the “no buildings” case. This additional stream-tube contraction causes a reduction in turbulence inside the test section and could explain the observed reduction in test section turbulence due to the presence of the Google Campus.

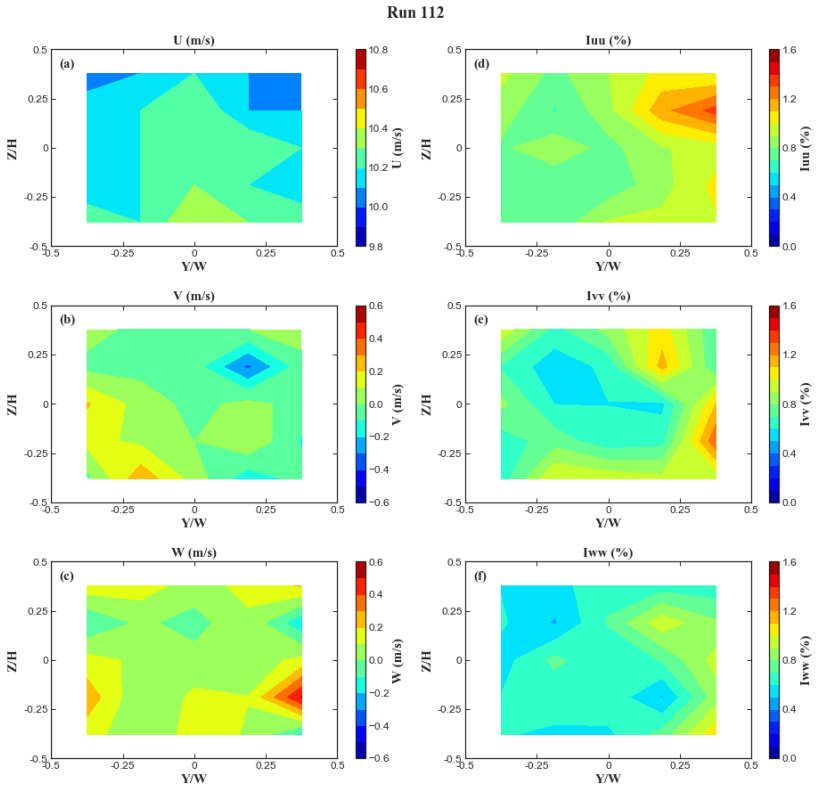


Fig. 44(a). No buildings, yaw = –24 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

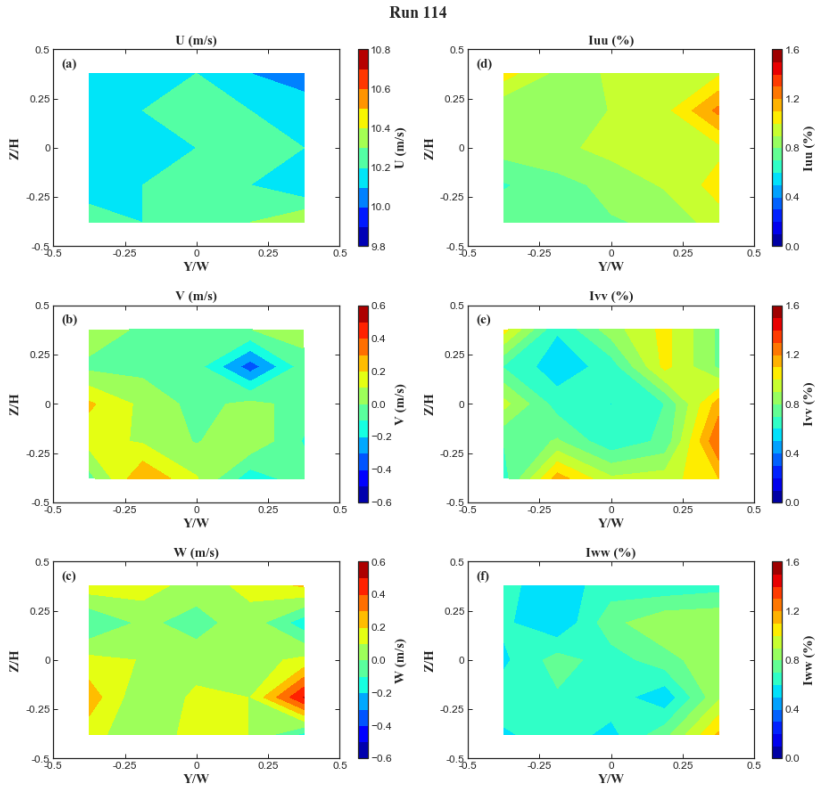


Fig. 44(b). NASA buildings only, yaw = –24 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

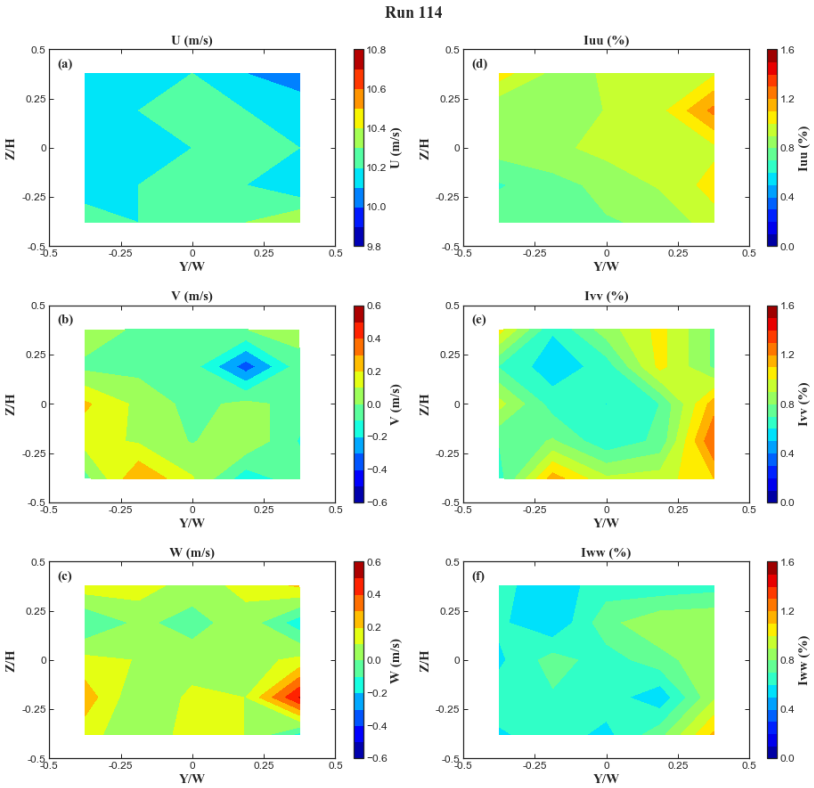


Fig. 44(c). NASA buildings only, yaw = –24 deg, pilot view. Wind = 8 mph, V_{ts} = 20 kts.

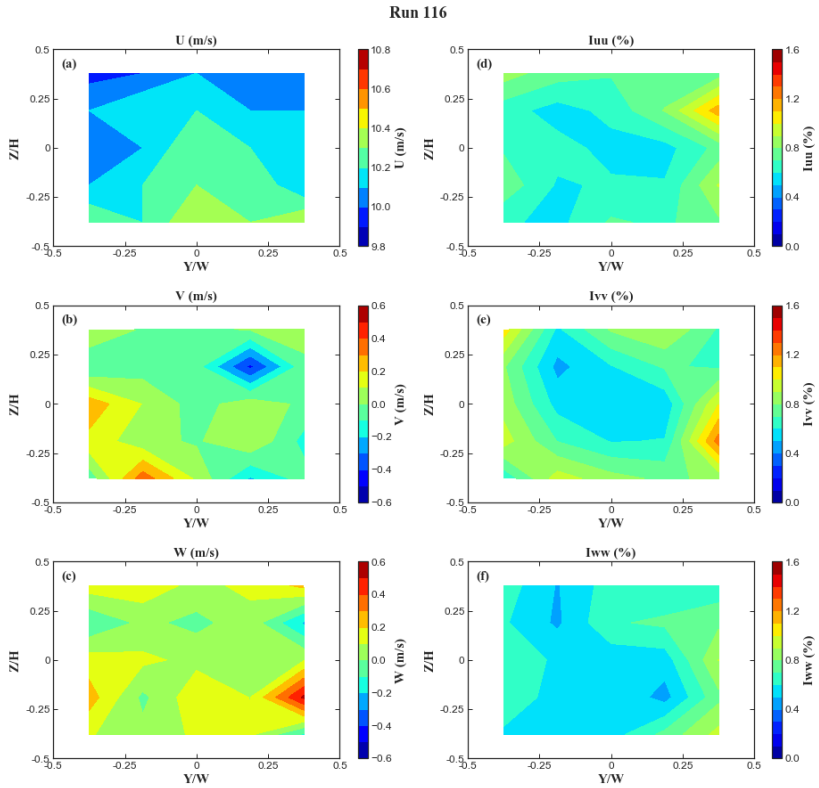


Fig. 44(d). NASA + Google buildings, yaw = –24 deg, pilot view. Wind = 8 mph, V_{ts} = 20 kts.

Figure 44. Test section flow quality area surveys (wind = 8 mph, V_{ts} = 20 kts, yaw = –24 deg).

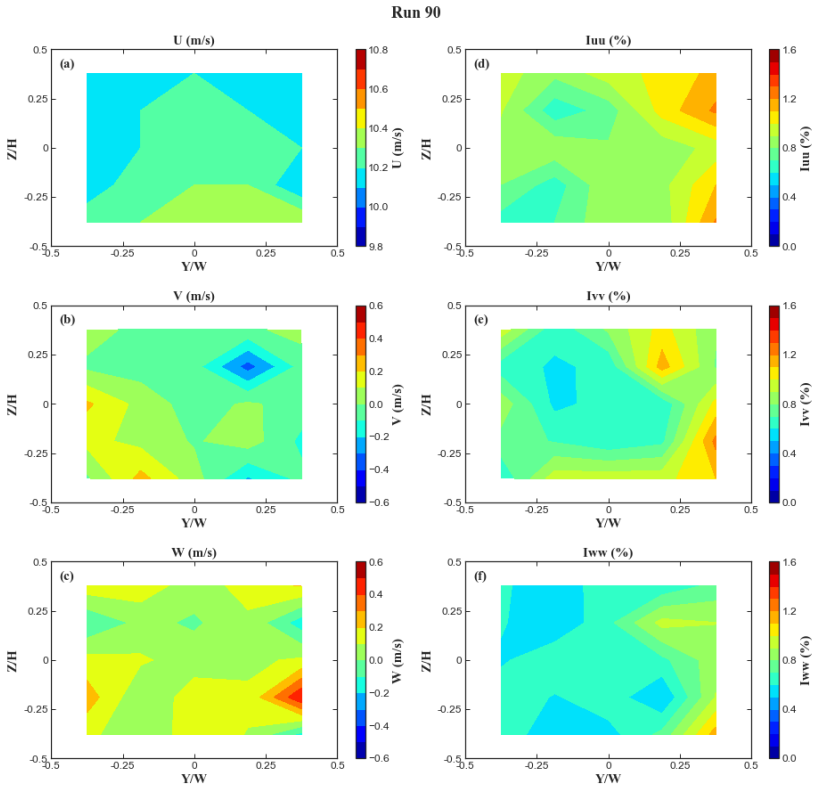


Fig. 45(a). No buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

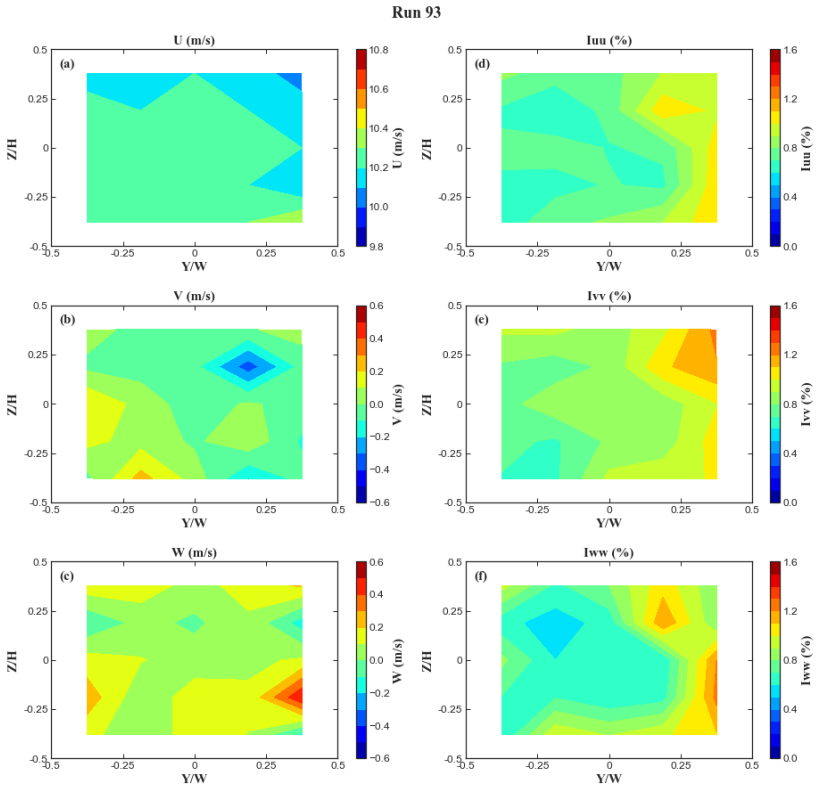


Fig. 45(b). Pre-2019 buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

Fig. 45(c). Pre-2019 buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

Fig. 45(d). All buildings, yaw = –29 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

Figure 45. Test section flow quality area surveys (wind = 8 mph, V_{ts} = 20 kts, yaw = –29 deg).

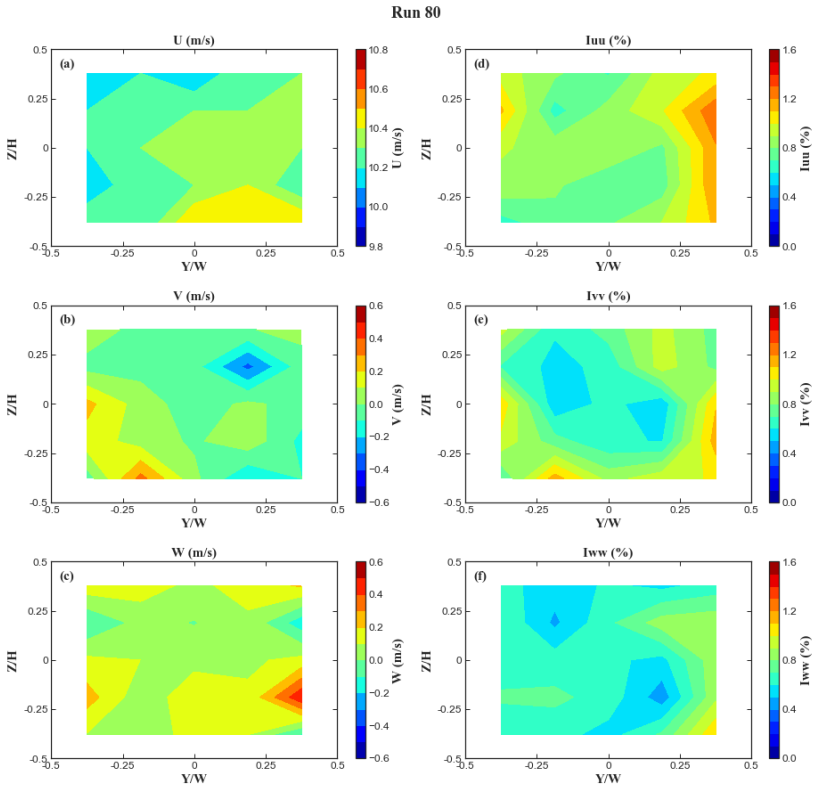


Fig. 46(a). No buildings, yaw = –34 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

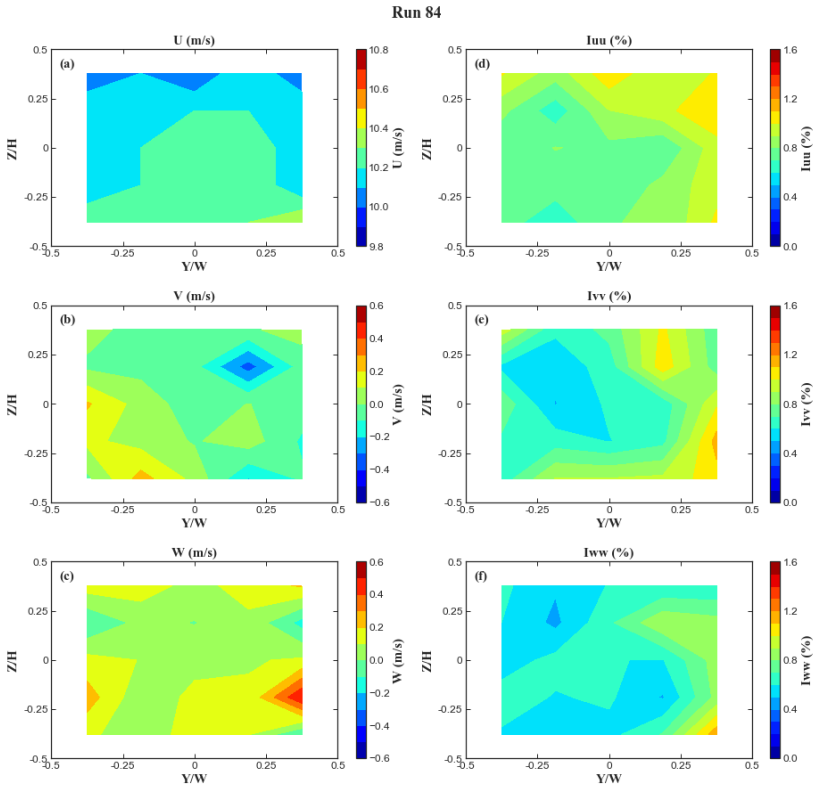


Fig. 46(b). NASA buildings only, yaw = –34 deg, pilot view.
Wind = 8 mph, V_{ts} = 20 kts.

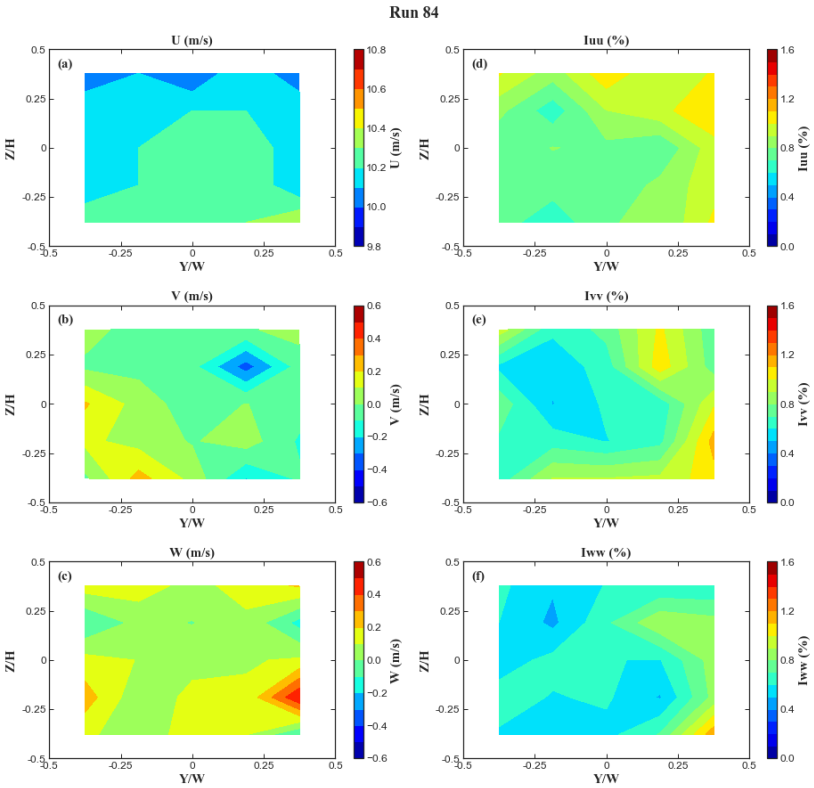


Fig. 46(c). NASA buildings only, yaw = –34 deg, pilot view. Wind = 8 mph, V_{ts} = 20 kts.

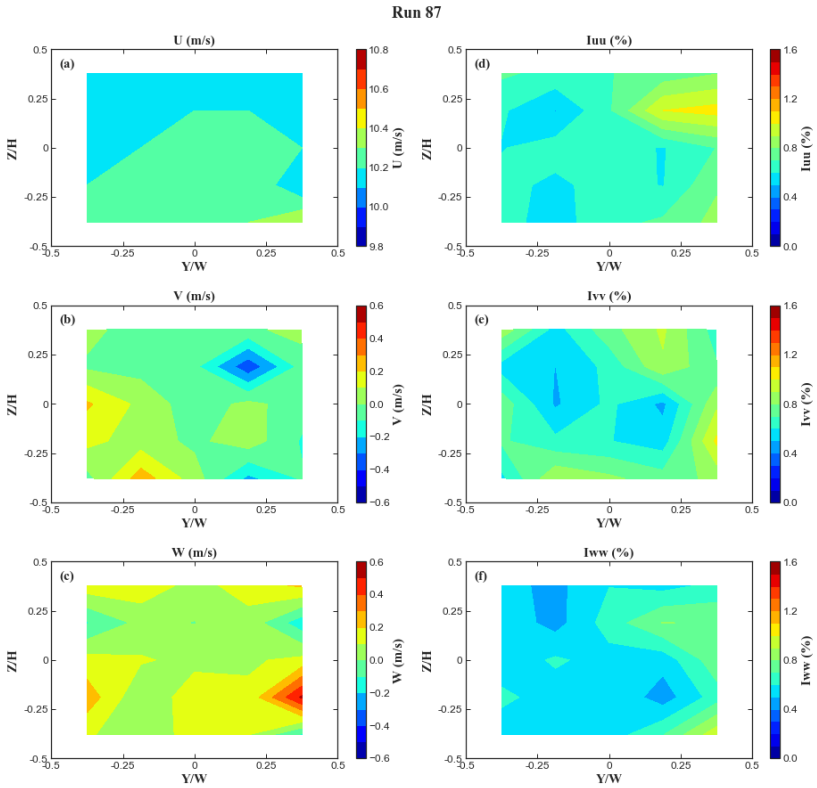


Fig. 46(d). NASA + Google buildings, yaw = –34 deg, pilot view. Wind = 8 mph, V_{ts} = 20 kts.

Figure 46. Test section flow quality area surveys (wind = 8 mph, V_{ts} = 20 kts, yaw = –34 deg).

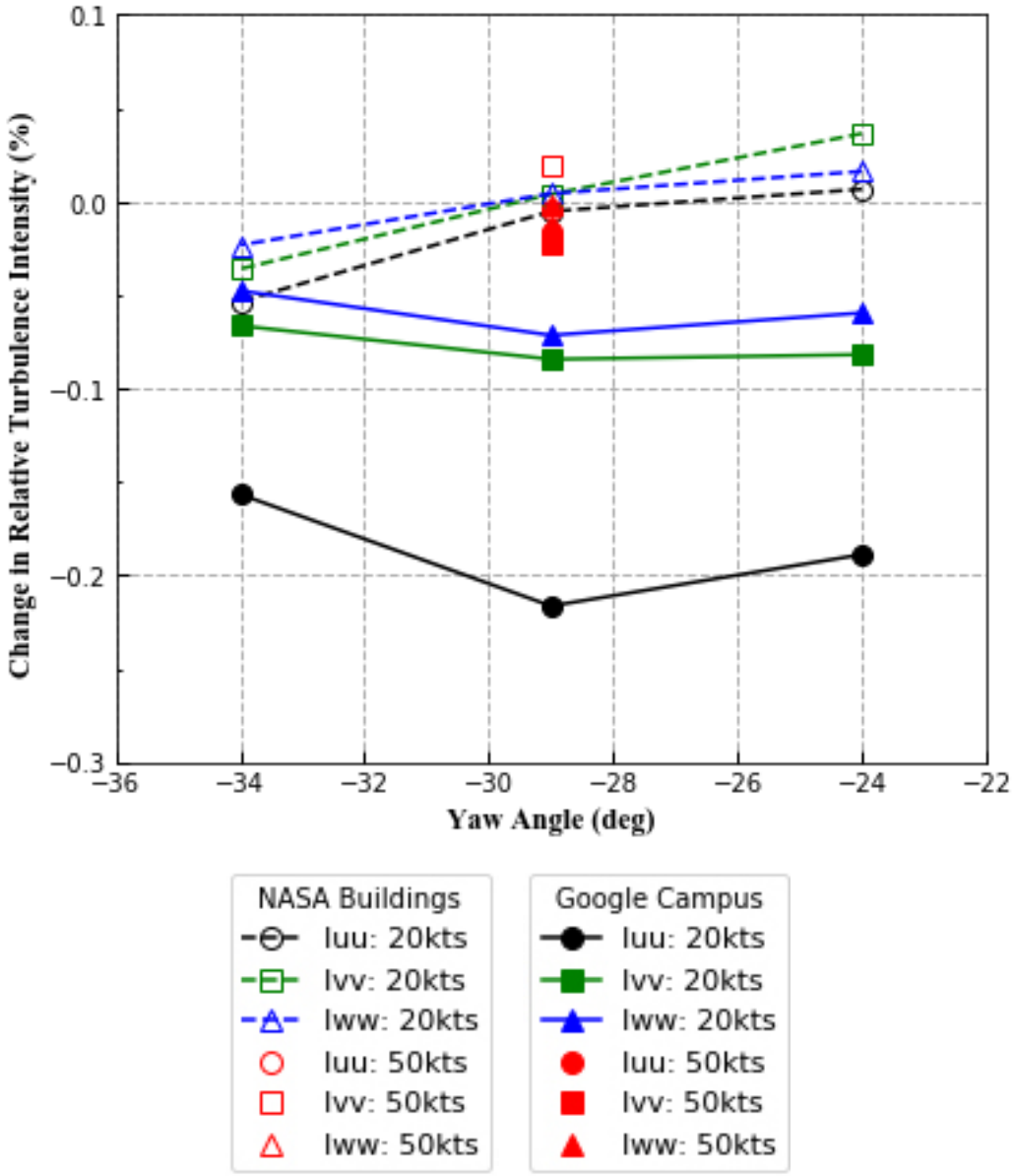


Figure 47. Change in relative turbulence intensity due to presence of either i) pre-2019 buildings compared to no buildings, or ii) Google Campus buildings compared to pre-2019 buildings.

2D and 3D Blockage

The 2D/3D Blockage Study is intended to provide information about generic upwind rectangular buildings located either symmetrically about the wind tunnel centerline or offset laterally such that one end of the building is located on the tunnel centerline. Each building has a fixed depth of 1 foot relative to the oncoming wind. The 2D buildings are not strictly 2D since they have an aspect ratio of either 16 or 32. For 2D blockage the buildings are symmetrically placed about the wind tunnel centerline. Two-dimensional conditions are expected to be approached at mid-span

with high section drag coefficient. The base pressure will be partially relieved approaching each end of the building, lowering the local section drag coefficient. The hope is that the ends of the buildings are sufficiently far from the tunnel centerline so that end effects are minimized.

A horseshoe vortex can be expected to form around any finite upwind blockage, caused by vortex filaments in the ground boundary layer convecting downstream towards the building and wrapping around the front of the building. To generate a 3D blockage, one end of the building is placed on the wind tunnel centerline. Remnants of the horseshoe vortex are expected to be entrained close to the midpoint of the inlet. How much of the flow rotation is visible in the test section depends on how successful the inlet honeycomb (vertical splayed vanes and horizontal splitter plates) is in eliminating swirl.

Table 4, the Cobra Probe Run Log Summary, identifies the 2D and 3D blockage test section measurements consisting of either vertical surveys through the test section centerline or full area surveys. Appendix B contains all tabulated measurement data and data plots.

A tuft wand was used to provide additional information about 2D buildings placed symmetrically about the tunnel centerline ahead of the inlet. As the building approached the inlet, the separated wake reattachment point was pushed back towards the rear face of the building. The separated region immediately downstream of the building never entered the inlet. As the reattachment point was pushed away from the inlet face towards the back face of the building, the flow being entrained into the inlet plunged down steeply from above the building.

Test section centerline turbulence measurements are summarized in Figure 48 for both "No Wind" and "Max Wind," and indicate that test section centerline turbulence is slightly higher for the case of "Max Wind," particularly at distances of 20 feet or less ahead of the inlet for 100-knot tunnel operation. Centerline test section turbulence was also found to be noticeably higher for a test section velocity of 50 knots compared to 100 knots, independent of atmospheric wind level. The filled symbols in Figure 48 represent data from the current study. The non-filled symbols for $V_{wind} = 0$ shown in Figure 48(a) are measurements from Figure B7 of Reference 3.

Inlet Spires

Inlet spires were investigated and tested with no buildings in the external flow field. Inlet spires installed on the upstream side of the inlet may not be the most efficient way of increasing test section turbulence because the inlet honeycomb and high-loss screen both serve to immediately act in opposition, as does the contraction cone. However, triangular spires mounted on the front face of the inlet may offer simplicity of installation over other options. Spires could be constructed from nylon cloth or parachute material and raised or lowered using a system of pulleys and winches. Load estimates have not been studied with respect to the inlet vanes, and the approach has not received consideration from NFAC management.

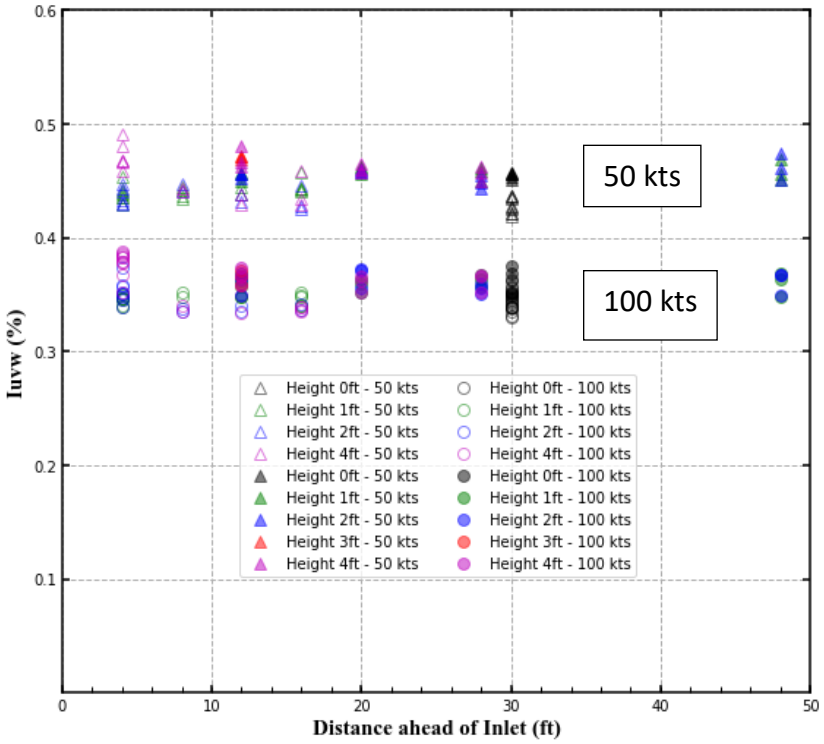


Fig. 48(a). No wind.

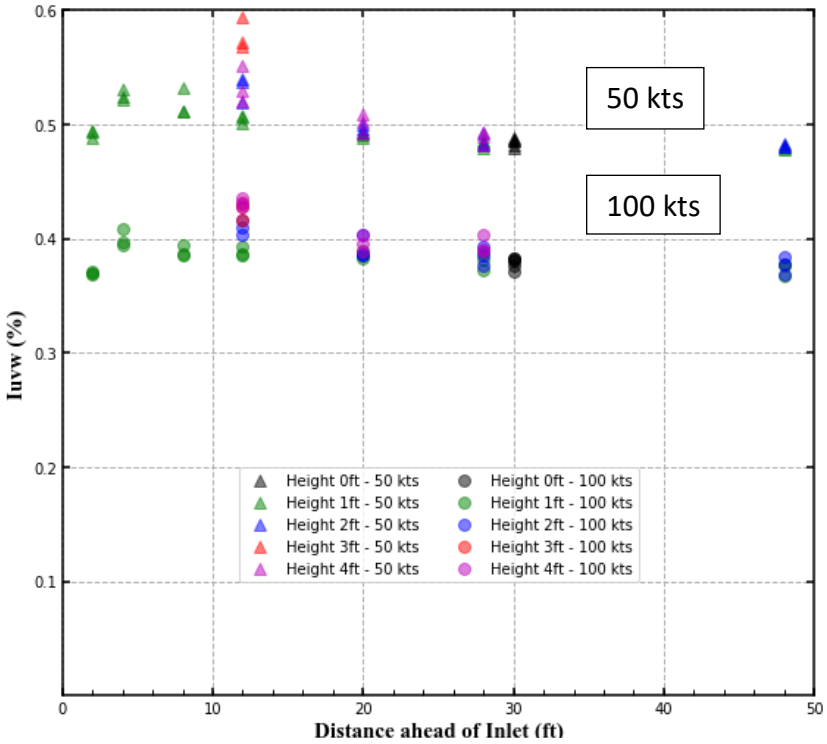


Fig. 48(b). Wind = 8 mph.

Figure 48. Test section centerline turbulence for 2D blockage ahead of inlet.

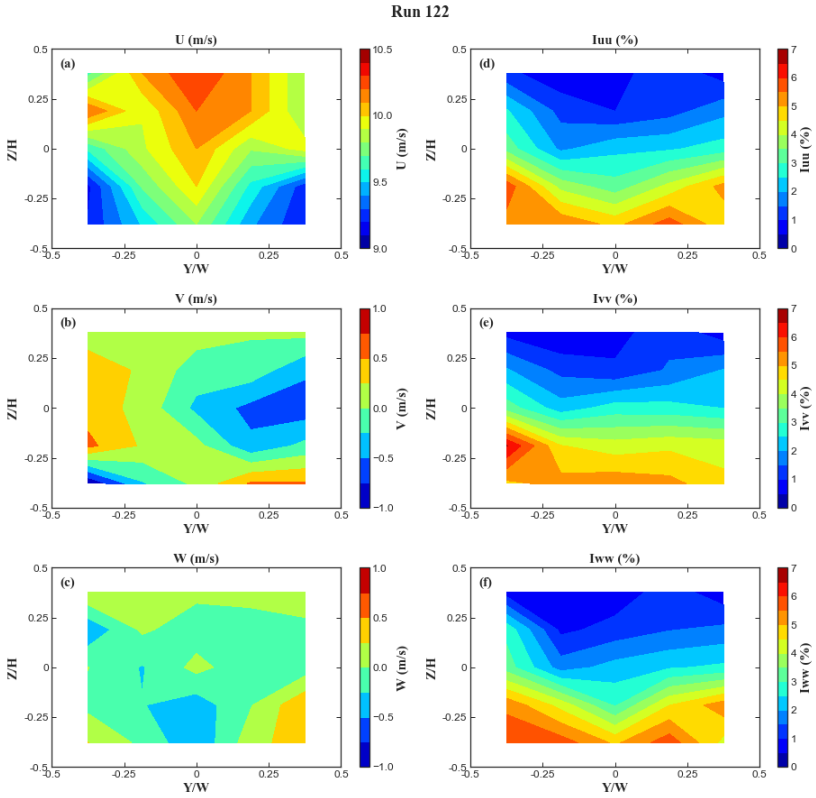


Fig. 49(a). Tall spires, yaw = 0 deg, pilot view.
No wind, V_{ts} = 10 m/s.

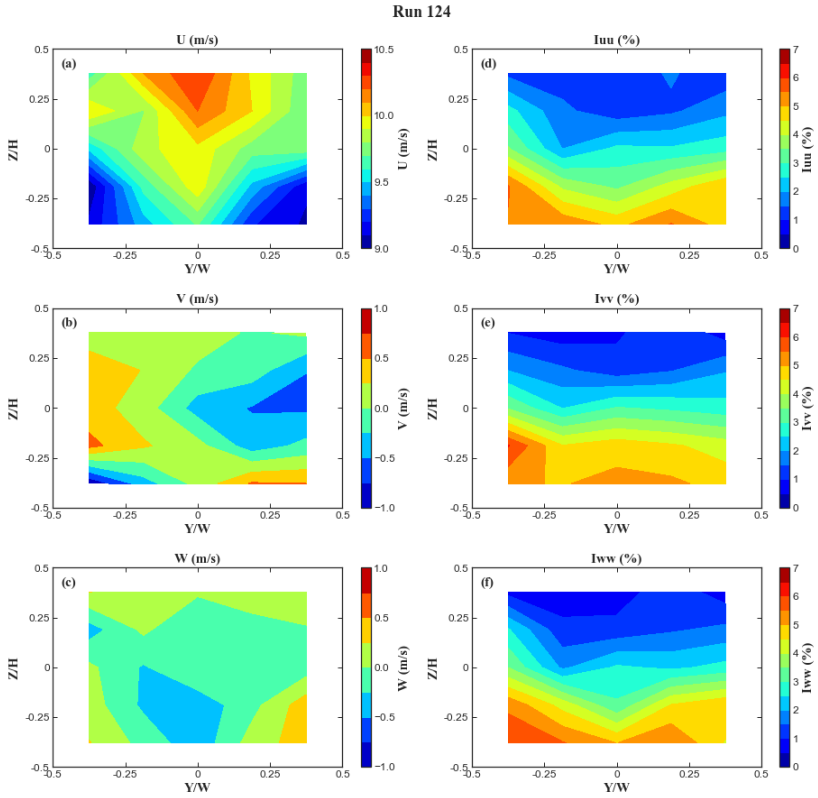


Fig. 49(b). Tall spires, yaw = 0 deg, pilot view.
Wind = 8 mph, V_{ts} = 10 m/s.

Figure 49. Effect of tall inlet spires on test section flow quality for V_{ts} = 10 m/s.

An alternative approach using multiple cones mounted at the start of the NFAC 80x120 wind tunnel test section would be more efficient in increasing test section turbulence as the turbulence source would not have to fight against the inlet honeycomb and high-loss inlet screen, or the contraction. This is a standard approach used in wind tunnels to simulate an atmospheric boundary layer on the test section floor. This approach comes with its own set of problems of how to install the cones in the test section without overloading the floor or ceiling of the NFAC test section. One possibility is to make the cones inflatable and tether them in such a way as to eliminate any wind-induced movement. A variation on this approach would be to structure the cones like a hoop skirt with decreasing hoop diameter with increasing height above the floor. Once again, this approach has not been studied to any degree.

In order to investigate wind farm aerodynamic performance, concentrating on the effect of neighboring wind turbines, small-scale wind turbine models become a necessity. For a 12-foot-diameter wind turbine with axis 12 feet above the test section floor, the top of turbine will be 18 feet above the floor. This implies that the test section flow quality in the lower 25 percent of the test section height will be important for such a wind turbine test.

The tall inlet spires (Fig. 28(a)) look significantly more promising than the short spires (Fig. 28(b)). Figure 49 presents area surveys of flow quality in the test section for a test section velocity of 10 m/s (approximately 22 mph) and shows that test section flow quality appears unchanged by ambient wind ahead of the inlet. All three relative turbulence intensity components are found to be greater than 5 percent close to the test section floor.

No attempt has been made to present or discuss all of the measurements that were made in this study. Minimal discussion and/or analysis has been provided for the 2D/3D Blockage Study, or on the use of inlet spires. Tabulated data for all of the Cobra probe measurements in the test section are provided in Appendix B.

CONCLUSIONS

The basic inlet performance for “no upwind buildings” was investigated for ambient winds at the inlet of up to 8 mph, wind direction relative to the tunnel centerline between –90 and +90 degrees, and test section velocities from 5 to 50 m/s (10 to 100 knots). The investigation used a geometrically scaled 1/50th-scale 80x120 wind tunnel model with a six-blower array to generate the ambient atmospheric wind. Test section turbulence was found to be independent of atmospheric wind speed and direction for test section velocities of 10 m/s or greater (20 knots) and wind direction between +90 and –90 degrees relative to the tunnel centerline. The primary determinant of test section turbulence was found to be test section velocity.

The main goal of this study was to quantify the effect of the Google Campus buildings on test section turbulence under certain wind conditions (wind speed and direction). The current measurements clearly demonstrate that any change in test section turbulence is negligible and of no consequence for $V_{ts} \geq 50$ knots. Measurements for $V_{ts} = 20$ knots indicate that test section turbulence in the 80x120 wind tunnel is slightly *reduced* by the presence of the Google Campus. The largest reduction in test section turbulence was found to occur in I_{uu}.

To summarize, the Google Campus is not expected to increase test section turbulence in the NFAC 80x120 wind tunnel.

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APPENDIX A

ALNOR PROBE MEASUREMENTS OF AMBIENT WIND

Table A1. Alnor Probe Data Table 100

Plots (Figures A1–A35). 115

Table A1. Alnor Probe Data Table.

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
11	1	61.3	0	2	0	42	7.32	Zero
	2	61.3	0	0.25	48.09	724	36.18	HK
	3	61.3	-3	0.25	"	815	37.44	
	4	61.3	-6	0.25	"	803	35.70	
	5	61.3	-9	0.25	"	759	54.32	
	6	61.3	-12	0.25	"	736	64.33	
	7	61.3	-15	0.25	"	713	23.75	
	8	61.3	0	0.25	"	704	50.56	HK
	9	61.3	0	2	0	25	9.16	Zero
	10	61.3	0	0.25	48.09	692	26.86	HK
	11	61.3	3	0.25	"	684	54.27	
	12	61.3	6	0.25	"	608	27.37	
	13	61.3	9	0.25	"	598	50.72	
	14	61.3	12	0.25	"	550	54.62	
	15	61.3	15	0.25	"	504	34.85	
	16	61.3	0	0.25	"	811	44.42	HK
	17	61.3	0	2	0	59	19.60	Zero
12	1	61.3	0	2	0	10	7.96	Zero
	2	61.3	0	0.5	47.73	842	34.08	HK
	3	61.3	-3	0.5	"	911	23.38	
	4	61.3	-6	0.5	"	861	63.81	
	5	61.3	-9	0.5	"	744	63.83	
	6	61.3	-12	0.5	"	739	43.71	
	7	61.3	-15	0.5	"	740	38.91	
	8	61.3	0	0.5	"	843	36.80	HK
	9	61.3	0	2	0	12	11.91	Zero
	10	61.3	0	0.5	47.73	857	22.76	HK
	11	61.3	3	0.5	"	759	30.38	
	12	61.3	6	0.5	"	691	33.84	
	13	61.3	9	0.5	"	676	30.65	
	14	61.3	12	0.5	"	633	32.69	
	15	61.3	15	0.5	"	558	60.99	
	16	61.3	0	0.5	"	820	36.84	HK
	18	61.3	0	2	0	39	10.11	Zero
13	1	61.3	0	2	0	39	10.11	Zero
	2	5	0	2	48	1259	51.99	
	3	10	0	2	"	794	45.45	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	4	20	0	2	"	986	34.53	
	5	30	0	2	"	1069	28.20	
	6	50	0	2	"	1043	33.35	
	7	61.3	0	2	0	86	21.40	Zero
14	1	61.3	0	2	0	19	10.96	Zero
	2	61.3	0	1	48	890	35.52	HK
	3	61.3	-3	1	"	907	46.68	
	4	61.3	-6	1	"	837	35.19	
	5	61.3	-9	1	"	814	39.52	
	6	61.3	-12	1	"	753	61.23	
	7	61.3	-15	1	"	790	42.30	
	8	61.3	0	1	"	896	38.02	HK
	9	61.3	0	2	0	20	13.30	Zero
	10	61.3	0	1	48	891	58.73	HK
	11	61.3	3	1	"	793	43.22	
	12	61.3	6	1	"	702	42.08	
	13	61.3	9	1	"	679	37.26	
	14	61.3	12	1	"	615	33.26	
	15	61.3	15	1	"	584	38.66	
	16	61.3	0	1	"	842	50.74	HK
	17	61.3	0	2	0	31	10.30	Zero
15	1	61.3	0	2	0	18	12.72	Zero
	2	61.3	0	2	48	931	21.44	HK
	3	61.3	-3	2	"	856	47.54	
	4	61.3	-6	2	"	809	95.19	
	5	61.3	-9	2	"	729	83.56	
	6	61.3	-12	2	"	652	51.38	
	7	61.3	-15	2	"	712	59.01	
	8	61.3	0	2	"	939	39.50	HK
	9	61.3	0	2	0	62	19.20	Zero
	10	61.3	0	2	48	888	45.58	HK
	11	61.3	3	2	"	805	23.75	
	12	61.3	6	2	"	782	23.00	
	13	61.3	9	2	"	733	27.16	
	14	61.3	12	2	"	691	26.33	
	15	61.3	15	2	"	578	114.51	
	16	61.3	0	2	"	951	50.35	HK
	17	61.3	0	2	0	66	12.01	Zero

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
16	1	61.3	0	2	0	66	12.01	Zero
	2	61.3	0	3	48	934	30.85	HK
	3	61.3	-3	3	"	823	41.74	
	4	61.3	-6	3	"	612	80.49	
	5	61.3	-9	3	"	550	53.44	
	6	61.3	-12	3	"	570	58.70	
	7	61.3	-15	3	"	684	62.21	
	8	61.3	0	3	"	896	49.45	HK
	9	61.3	0	2	0	108	35.89	Zero
	10	61.3	0	3	48	893	24.61	HK
	11	61.3	3	3	"	867	22.47	
	12	61.3	6	3	"	791	26.57	
	13	61.3	9	3	"	735	49.53	
	14	61.3	12	3	"	684	42.46	
	15	61.3	15	3	"	552	84.29	
	16	61.3	0	3	"	909	55.50	HK
	17	61.3	0	2	0	79	15.08	Zero
17	1	61.3	0	2	0	20	14.47	Zero
	2	61.3	0	4	48	868	30.01	HK
	3	61.3	-3	4	"	752	33.47	
	4	61.3	-6	4	"	505	65.37	
	5	61.3	-9	4	"	390	53.15	
	6	61.3	-12	4	"	502	51.35	
	7	61.3	-15	4	"	574	64.07	
	8	61.3	0	4	"	837	57.51	HK
	9	61.3	0	2	0	82	219.39	Zero
	10	61.3	0	4	48	880	59.11	HK
	11	61.3	3	4	"	820	27.74	
	12	61.3	6	4	"	749	29.87	
	13	61.3	9	4	"	697	39.22	
	14	61.3	12	4	"	591	70.34	
	15	61.3	15	4	"	485	111.20	
	16	61.3	0	4	"	868	77.59	HK
	17	61.3	0	2	0	58	30.93	Zero
18	17	61.3	0	2	0	58	30.93	Zero
	18	10	0	2	48	784	21.31	
	19	20	0	2	"	1072	31.95	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	20	30	0	2	"	1109	35.48	
	21	40	0	2	"	1105	37.00	
	22	50	0	2	"	1052	22.42	
	23	60	0	2	"	977	22.20	
	24	61.3	0	2	0	30	20.15	Zero
19	1	61.3	0	2	0	26	3.70	Zero
	2	61.3	0	5	48	754	53.23	HK
	3	61.3	-3	5	"	592	67.24	
	4	61.3	-6	5	"	429	54.45	
	5	61.3	-9	5	"	345	38.86	
	6	61.3	-12	5	"	391	67.48	
	7	61.3	-15	5	"	429	75.34	
	8	61.3	0	5	"	771	59.93	HK
	9	61.3	0	2	0	31	15.23	Zero
	10	61.3	0	5	48	749	43.31	HK
	11	61.3	3	5	"	762	44.85	
	12	61.3	6	5	"	726	41.94	
	13	61.3	9	5	"	640	45.34	
	14	61.3	12	5	"	600	45.29	
	15	61.3	15	5	"	524	47.72	
	16	61.3	0	5	"	726	53.57	HK
	17	61.3	0	2	0	34	17.89	Zero
20	1	26.3	0	2	0	27	16.81	Zero
	2	26.3	0	2	48	1145	31.54	HK
	3	26.3	-3	2	"	904	57.02	
	4	26.3	-6	2	"	1023	40.07	
	5	26.3	-9	2	"	1015	33.46	
	6	26.3	-12	2	"	742	122.01	
	7	26.3	-15	2	"	659	77.59	
	8	26.3	0	2	"	1113	78.09	HK
	9	26.3	0	2	0	42	19.61	Zero
	10	26.3	0	2	48	1128	25.22	HK
	11	26.3	3	2	"	1190	17.94	
	12	26.3	6	2	"	1071	26.34	
	13	26.3	9	2	"	986	38.92	
	14	26.3	12	2	"	792	38.81	
	15	26.3	15	2	"	724	69.66	
	16	26.3	0	2	"	1096	42.38	HK

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	17	26.3	0	2	0	49	20.52	Zero
21	1	26.3	0	2	0	60	25.46	Zero
	2	26.3	0	0.25	48	1209	17.34	HK
	3	26.3	-3	0.25	"	1143	39.48	
	4	26.3	-6	0.25	"	1073	31.22	
	5	26.3	-9	0.25	"	1113	25.26	
	6	26.3	-12	0.25	"	962	77.24	
	7	26.3	-15	0.25	"	744	60.35	
	8	26.3	0	0.25	"	1211	75.68	HK
	9	26.3	0	2	0	65	49.18	Zero
	10	26.3	0	0.25	48	1188	92.12	HK
	11	26.3	3	0.25	"	1235	27.26	
	12	26.3	6	0.25	"	1144	16.42	
	13	26.3	9	0.25	"	831	129.44	
	14	26.3	12	0.25	"	705	28.53	
	15	26.3	15	0.25	"	651	51.72	
	16	26.3	0	0.25	"	1213	77.50	HK
	17	26.3	0	2	0	68	40.97	Zero
22	1	26.3	0	2	0	68	40.97	Zero
	2	26.3	0	0.5	48	1245	24.09	HK
	3	26.3	-3	0.5	"	1140	29.42	
	4	26.3	-6	0.5	"	1101	46.27	
	5	26.3	-9	0.5	"	1111	59.96	
	6	26.3	-12	0.5	"	1000	73.15	
	7	26.3	-15	0.5	"	673	105.51	
	8	26.3	0	0.5	"	1237	32.88	HK
	9	26.3	0	2	0	86	60.52	Zero
	10	26.3	0	0.5	48	1239	20.20	HK
	11	26.3	3	0.5	"	1255	22.68	
	12	26.3	6	0.5	"	1159	19.44	
	13	26.3	9	0.5	"	972	69.71	
	14	26.3	12	0.5	"	735	74.21	
	15	26.3	15	0.5	"	668	71.45	
	16	26.3	0	0.5	"	1227	81.87	HK
	17	26.3	0	2	0	144	66.95	Zero
23	1	26.3	0	2	0	57	5.68	Zero
	2	26.3	0	1	48.11	1206	16.40	HK

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	3	26.3	-3	1	"	997	34.38	
	4	26.3	-6	1	"	1027	26.80	
	5	26.3	-9	1	"	1139	38.89	
	6	26.3	-12	1	"	972	103.84	
	7	26.3	-15	1	"	700	101.30	
	8	26.3	0	1	"	1176	61.37	HK
	9	26.3	0	2	0	30	26.55	Zero
	10	26.3	0	1	48.11	1198	23.47	HK
	11	26.3	3	1	"	1231	17.97	
	12	26.3	6	1	"	1128	24.57	
	13	26.3	9	1	"	897	81.57	
	14	26.3	12	1	"	685	42.65	
	15	26.3	15	1	"	695	29.44	
	16	26.3	0	1	"	1173	32.87	HK
	17	26.3	0	2	0	46	10.24	Zero
24	17	26.3	0	2	0	46	10.24	Zero
	2	26.3	0	3	48.11	878	43.59	HK
	3	26.3	-3	3	"	758	47.36	
	4	26.3	-6	3	"	867	52.85	
	5	26.3	-9	3	"	765	44.19	
	6	26.3	-12	3	"	680	52.61	
	7	26.3	-15	3	"	613	29.23	
	8	26.3	0	3	"	911	47.96	HK
	9	26.3	0	2	0	23	20.64	Zero
	10	26.3	0	3	48.11	906	53.83	HK
	11	26.3	3	3	"	1104	26.31	
	12	26.3	6	3	"	1041	26.37	
	13	26.3	9	3	"	987	12.82	
	14	26.3	12	3	"	837	27.20	
	15	26.3	15	3	"	736	58.48	
	16	26.3	0	3	"	912	54.14	HK
	17	26.3	0	2	0	48	15.71	Zero
25	1	26.3	0	2	0	30	30.25	Zero
	2	26.3	0	4	48.06	756	41.98	HK
	3	26.3	-3	4	"	664	51.37	
	4	26.3	-6	4	"	686	57.33	
	5	26.3	-9	4	"	661	57.89	
	6	26.3	-12	4	"	500	61.08	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	7	26.3	-15	4	"	506	47.75	
	8	26.3	0	4	"	775	59.48	HK
	9	26.3	0	2	0	89	30.35	Zero
	10	26.3	0	4	48.06	743	39.46	HK
	11	26.3	3	4	"	984	39.36	
	12	26.3	6	4	"	990	32.29	
	13	26.3	9	4	"	882	32.56	
	14	26.3	12	4	"	879	23.96	
	15	26.3	15	4	"	733	69.73	
	16	26.3	0	4	"	734	41.59	HK
	17	26.3	0	2	0	36	17.15	Zero
26	1	26.3	0	2	0	36	17.15	Zero
	2	26.3	0	5	48.06	608	34.06	HK
	3	26.3	-3	5	"	523	79.39	
	4	26.3	-6	5	"	505	74.19	
	5	26.3	-9	5	"	496	66.88	
	6	26.3	-12	5	"	511	64.45	
	7	26.3	-15	5	"	425	46.15	
	8	26.3	0	5	"	662	70.51	HK
	9	26.3	0	2	0	74	46.20	Zero
	10	26.3	0	5	48.06	618	40.79	HK
	11	26.3	3	5	"	819	72.07	
	12	26.3	6	5	"	956	33.76	
	13	26.3	9	5	"	837	29.67	
	14	26.3	12	5	"	804	35.67	
	15	26.3	15	5	"	717	34.09	
	16	26.3	0	5	"	576	31.39	HK
	17	26.3	0	2	0	64	31.08	Zero
27	1	26.3	0	2	0	20	10.65	Zero
	2	26.3	0	2	48	1080	38.57	
	3	26.3	0	2	32.04	675	20.28	
	4	26.3	0	2	28	585	38.07	
	5	26.3	0	2	26.75	591	22.64	
	6	26.3	0	2	25.50	527	29.30	
	7	26.3	0	2	26.02	542	18.92	
	8	26.3	0	2	26.02	557	25.05	
	9	26.3	0	2	0	23	13.08	Zero
	10	26.3	0	2	26.02	548	16.83	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
28	1	26.3	0	2	0	23	13.08	Zero
	2	26.3	0	2	26.02	548	16.83	HK
	3	26.3	-3	2	"	465	27.16	
	4	26.3	-6	2	"	556	29.16	
	5	26.3	-9	2	"	547	15.74	
	6	26.3	-12	2	"	475	43.55	
	7	26.3	-15	2	"	297	22.64	
	8	26.3	0	2	"	550	33.26	HK
	9	26.3	0	2	0	44	29.62	Zero
	10	26.3	0	2	26.02	571	22.11	HK
	11	26.3	3	2	"	603	18.56	
	12	26.3	6	2	"	548	17.78	
	13	26.3	9	2	"	524	20.80	
	14	26.3	12	2	"	363	25.86	
	15	26.3	15	2	"	358	61.23	
	16	26.3	0	2	"	541	20.17	HK
	17	26.3	0	2	0	14	12.94	Zero
29	1	26.3	0	2	0	27	11.96	Zero
	2	26.3	0	0.25	26.07	612	8.05	HK
	3	26.3	-3	0.25	"	550	11.48	
	4	26.3	-6	0.25	"	542	14.94	
	5	26.3	-9	0.25	"	571	14.59	
	6	26.3	-12	0.25	"	432	71.68	
	7	26.3	-15	0.25	"	314	58.54	
	8	26.3	0	0.25	"	607	10.51	HK
	9	26.3	0	2	0	23	11.07	Zero
	10	26.3	0	0.25	26.07	605	10.55	HK
	11	26.3	3	0.25	"	628	17.60	
	12	26.3	6	0.25	"	581	15.61	
	13	26.3	9	0.25	"	454	46.29	
	14	26.3	12	0.25	"	332	19.25	
	15	26.3	15	0.25	"	297	21.45	
	16	26.3	0	0.25	"	614	13.15	HK
	17	26.3	0	2	0	40	22.40	Zero
30	1	26.3	0	2	0	40	22.40	Zero
	2	26.3	0	0.5	26.07	636	15.73	HK
	3	26.3	-3	0.5	"	541	13.44	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	4	26.3	-6	0.5	"	536	19.62	
	5	26.3	-9	0.5	"	546	30.71	
	6	26.3	-12	0.5	"	488	46.54	
	7	26.3	-15	0.5	"	344	34.34	
	8	26.3	0	0.5	"	634	14.59	HK
	9	26.3	0	2	0	27	18.85	Zero
	10	26.3	0	0.5	26.07	629	52.06	HK
	11	26.3	3	0.5	"	658	12.60	
	12	26.3	6	0.5	"	604	10.18	
	13	26.3	9	0.5	"	511	35.35	
	14	26.3	12	0.5	"	367	46.87	
	15	26.3	15	0.5	"	374	16.58	
	16	26.3	0	0.5	"	633	10.94	HK
	17	26.3	0	2	0	21	16.72	Zero
31	1	26.3	0	2	0	58	7.32	Zero
	2	26.3	0	1	26	615	12.11	HK
	3	26.3	-3	1	"	536	29.90	
	4	26.3	-6	1	"	556	20.20	
	5	26.3	-9	1	"	623	14.58	
	6	26.3	-12	1	"	478	51.11	
	7	26.3	-15	1	"	352	24.14	
	8	26.3	0	1	"	601	42.79	HK
	9	26.3	0	2	0	67	10.96	Zero
	10	26.3	0	1	26	611	9.24	HK
	11	26.3	3	1	"	642	11.94	
	12	26.3	6	1	"	618	9.51	
	13	26.3	9	1	"	400	27.66	
	14	26.3	12	1	"	292	31.93	
	15	26.3	15	1	"	271	30.93	
	16	26.3	0	1	"	604	32.16	HK
	17	26.3	0	2	0	61	29.29	Zero
32	1	26.3	0	2	0	55	11.89	Zero
	2	26.3	0	3	26.02	442	30.98	HK
	3	26.3	-3	3	"	409	29.83	
	4	26.3	-6	3	"	472	37.10	
	5	26.3	-9	3	"	453	37.61	
	6	26.3	-12	3	"	345	35.37	
	7	26.3	-15	3	"	245	31.43	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	8	26.3	0	3	"	463	40.60	HK
	9	26.3	0	2	0	50	19.18	Zero
	10	26.3	0	3	26.02	460	18.64	HK
	11	26.3	3	3	"	570	16.02	
	12	26.3	6	3	"	541	11.85	
	13	26.3	9	3	"	500	7.35	
	14	26.3	12	3	"	410	25.78	
	15	26.3	15	3	"	332	40.83	
	16	26.3	0	3	"	477	34.51	HK
	17	26.3	0	2	0	65	17.83	Zero
33	1	26.3	0	2	0	65	17.83	Zero
	2	26.3	0	4	26.02	383	20.58	HK
	3	26.3	-3	4	"	364	22.16	
	4	26.3	-6	4	"	417	43.36	
	5	26.3	-9	4	"	374	37.53	
	6	26.3	-12	4	"	318	40.12	
	7	26.3	-15	4	"	181	41.64	
	8	26.3	0	4	"	370	47.05	HK
	9	26.3	0	2	0	42	15.68	Zero
	10	26.3	0	4	26.02	424	20.17	HK
	11	26.3	3	4	"	535	18.50	
	12	26.3	6	4	"	522	9.85	
	13	26.3	9	4	"	474	16.83	
	14	26.3	12	4	"	450	32.33	
	15	26.3	15	4	"	416	30.34	
	16	26.3	0	4	"	429	38.66	HK
	17	26.3	0	2	0	39	15.66	Zero
34	1	26.3	0	2	0	34	9.70	Zero
	2	26.3	0	5	26	289	21.63	HK
	3	26.3	-3	5	"	314	39.74	
	4	26.3	-6	5	"	320	39.10	
	5	26.3	-9	5	"	275	33.75	
	6	26.3	-12	5	"	185	34.13	
	7	26.3	-15	5	"	124	33.55	
	8	26.3	0	5	"	288	31.16	HK
	9	26.3	0	2	0	85	9.93	Zero
	10	26.3	0	5	26	287	37.20	HK
	11	26.3	3	5	"	404	26.09	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	12	26.3	6	5	"	495	29.57	
	13	26.3	9	5	"	464	17.54	
	14	26.3	12	5	"	439	20.75	
	15	26.3	15	5	"	360	30.93	
	16	26.3	0	5	"	301	47.45	HK
	17	26.3	0	2	0	74	13.09	Zero
35	1	26.3	0	2	0	74	13.09	Zero
	2	10	0	2	26	424	22.89	
	3	20	0	2	"	497	18.01	
	4	30	0	2	"	549	22.64	
	5	40	0	2	"	559	24.26	
	6	50	0	2	"	517	19.75	
	7	60	0	2	"	447	19.17	
	8	26.3	0	2	0	81	23.10	Zero
36	1	61.3	0	2	0	25	9.59	Zero
	2	61.3	0	2	48.06	531	34.91	HK
	3	61.3	-3	2	"	576	32.98	
	4	61.3	-6	2	"	538	44.83	
	5	61.3	-9	2	"	512	23.49	
	6	61.3	-12	2	"	571	40.57	
	7	61.3	-15	2	"	603	38.02	
	8	61.3	0	2	"	539	41.26	HK
	9	61.3	0	2	0	33	8.19	Zero
	10	61.3	0	2	48.06	542	48.80	HK
	11	61.3	3	2	"	498	30.28	
	12	61.3	6	2	"	544	53.98	
	13	61.3	9	2	"	523	37.61	
	14	61.3	12	2	"	501	54.37	
	15	61.3	15	2	"	463	38.19	
	16	61.3	0	2	"	518	59.38	HK
	17	61.3	0	2	0	25	12.28	Zero
37	1	61.3	0	2	0	54	6.93	Zero
	2	61.3	0	0.25	48.11	475	18.90	HK
	3	61.3	-3	0.25	"	495	25.78	
	4	61.3	-6	0.25	"	522	14.48	
	5	61.3	-9	0.25	"	503	30.47	
	6	61.3	-12	0.25	"	544	27.04	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	7	61.3	-15	0.25	"	574	22.63	
	8	61.3	0	0.25	"	473	29.73	HK
	9	61.3	0	2	0	36	21.50	Zero
	10	61.3	0	0.25	48.11	476	26.88	HK
	11	61.3	3	0.25	"	428	32.24	
	12	61.3	6	0.25	"	442	33.98	
	13	61.3	9	0.25	"	431	47.40	
	14	61.3	12	0.25	"	403	49.73	
	15	61.3	15	0.25	"	306	76.48	
	16	61.3	0	0.25	"	482	16.67	HK
	17	61.3	0	2	0	33	11.33	Zero
38	1	61.3	0	2	0	33	11.33	Zero
	2	61.3	0	0.5	48.11	515	24.46	HK
	3	61.3	-3	0.5	"	514	26.99	
	4	61.3	-6	0.5	"	512	26.73	
	5	61.3	-9	0.5	"	535	27.68	
	6	61.3	-12	0.5	"	588	26.77	
	7	61.3	-15	0.5	"	614	31.96	
	8	61.3	0	0.5	"	522	24.73	HK
	9	61.3	0	2	0	68	40.42	Zero
	10	61.3	0	0.5	48.11	530	20.49	HK
	11	61.3	3	0.5	"	471	35.60	
	12	61.3	6	0.5	"	514	57.17	
	13	61.3	9	0.5	"	510	31.61	
	14	61.3	12	0.5	"	353	162.37	
	15	61.3	15	0.5	"	379	62.65	
	16	61.3	0	0.5	"	542	23.63	HK
	17	61.3	0	2	0	40	21.25	Zero
39	1	61.3	0	2	0	37	11.38	Zero
	2	61.3	0	1	48.09	535	29.09	HK
	3	61.3	-3	1	"	553	38.00	
	4	61.3	-6	1	"	537	18.05	
	5	61.3	-9	1	"	558	30.22	
	6	61.3	-12	1	"	587	29.42	
	7	61.3	-15	1	"	612	29.16	
	8	61.3	0	1	"	510	36.01	HK
	9	61.3	0	2	0	31	7.18	Zero
	10	61.3	0	1	48.09	516	31.40	HK

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	11	61.3	3	1	"	471	30.47	
	12	61.3	6	1	"	517	41.96	
	13	61.3	9	1	"	493	51.69	
	14	61.3	12	1	"	442	32.76	
	15	61.3	15	1	"	374	49.71	
	16	61.3	0	1	"	528	38.60	HK
	17	61.3	0	2	0	34	15.51	Zero
40	1	61.3	0	2	0	34	15.51	Zero
	2	61.3	0	3	48.09	624	30.33	HK
	3	61.3	-3	3	"	620	35.86	
	4	61.3	-6	3	"	548	24.75	
	5	61.3	-9	3	"	511	22.25	
	6	61.3	-12	3	"	549	30.27	
	7	61.3	-15	3	"	552	24.76	
	8	61.3	0	3	"	547	33.27	HK
	9	61.3	0	2	0	36	11.72	Zero
	10	61.3	0	3	48.09	615	30.47	HK
	11	61.3	3	3	"	561	54.90	
	12	61.3	6	3	"	576	41.07	
	13	61.3	9	3	"	535	35.17	
	14	61.3	12	3	"	490	60.69	
	15	61.3	15	3	"	467	38.79	
	16	61.3	0	3	"	585	31.69	HK
	17	61.3	0	2	0	48	15.84	Zero
41	1	61.3	0	2	0	37	9.96	Zero
	2	61.3	0	4	48.06	620	41.70	HK
	3	61.3	-3	4	"	597	30.68	
	4	61.3	-6	4	"	511	30.16	
	5	61.3	-9	4	"	439	37.50	
	6	61.3	-12	4	"	479	42.10	
	7	61.3	-15	4	"	530	48.63	
	8	61.3	0	4	"	617	35.18	HK
	9	61.3	0	2	0	27	10.97	Zero
	10	61.3	0	4	48.06	618	39.61	HK
	11	61.3	3	4	"	622	49.68	
	12	61.3	6	4	"	624	31.50	
	13	61.3	9	4	"	598	48.09	
	14	61.3	12	4	"	576	29.47	

Table A1. Alnor Probe Data Table (cont.).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	15	61.3	15	4	"	501	48.79	
	16	61.3	0	4	"	642	41.18	HK
	17	61.3	0	2	0	41	23.24	Zero
42	1	61.3	0	2	0	41	23.24	Zero
	2	61.3	0	5	48.06	669	42.39	HK
	3	61.3	-3	5	"	571	60.20	
	4	61.3	-6	5	"	492	47.10	
	5	61.3	-9	5	"	448	45.01	
	6	61.3	-12	5	"	358	62.27	
	7	61.3	-15	5	"	422	63.43	
	8	61.3	0	5	"	602	81.54	HK
	9	61.3	0	2	0	13	11.26	Zero
	10	61.3	0	5	48.06	678	25.75	HK
	11	61.3	3	5	"	695	29.01	
	12	61.3	6	5	"	661	24.78	
	13	61.3	9	5	"	627	38.19	
	14	61.3	12	5	"	557	47.32	
	15	61.3	15	5	"	497	37.19	
	16	61.3	0	5	"	638	40.97	HK
	17	61.3	0	2	0	35	20.98	Zero
45	1	70.33	0	2	0	51	10.61	Zero
	2	70.33	0	2	47.97	698	33.82	HK V_{wind} = Max, V_{ts} = 0
	3	70.33	0	0.25	"	442	86.32	"
	4	70.33	0	0.5	"	512	31.91	"
	5	70.33	0	0.75	"	585	47.05	"
	6	70.33	0	1	"	630	29.58	"
	7	70.33	0	1.25	"	682	36.50	"
	8	70.33	0	1.5	"	685	51.12	"
	9	70.33	0	2	"	709	24.24	HK
	10	70.33	0	2	0	35	20.88	Zero
46	1	70.33	0	2	0	35	20.88	Zero
	2	70.33	0	2	47.97	951	25.12	HK V_{wind} = Max, V_{ts} = 100kt
	3	70.33	0	0.25	"	927	15.23	"
	4	70.33	0	0.5	"	961	17.65	"
	5	70.33	0	0.75	"	965	14.48	"
	6	70.33	0	1	"	989	13.07	"
	7	70.33	0	1.25	"	980	14.67	"

Table A1. Alnor Probe Data Table (concluded).

Run	Point	Probe Position X (ft), Y (ft), Z (ft)			Fan Speed (Hz)	Velocity (fpm)		Comments
						Average	Standard Deviation	
	8	70.33	0	1.5	"	981	12.00	"
	9	70.33	0	2	"	954	28.04	HK
	10	70.33	0	2	0	61	20.73	Zero
47	1	70.33	0	2	0	61	20.73	Zero
	2	70.33	0	2	0	317	17.97	HK $V_{wind} = 0, V_{ts} = 100$kt
	3	70.33	0	0.25	0	318	15.31	"
	4	70.33	0	0.5	0	339	12.78	"
	5	70.33	0	0.75	0	380	9.63	"
	6	70.33	0	1	0	344	28.36	"
	7	70.33	0	1.25	0	340	15.44	"
	8	70.33	0	1.5	0	344	20.88	"
	9	70.33	0	2	0	318	18.02	HK
	10	70.33	0	2	0	62	20.86	Zero

Notes:

All Alnor probe ambient wind speed measurements were made with the 1/50th-scale 80x120 leg installed in the NFAC 80x120 section with the turntable yaw angle of 0 deg.

Tunnel = ON for Runs 46 and 47 only, with Vts = 100 kts.

Tunnel = OFF for all other Alnor probe measurements.

PLOTS (FIGURES A1–A35).

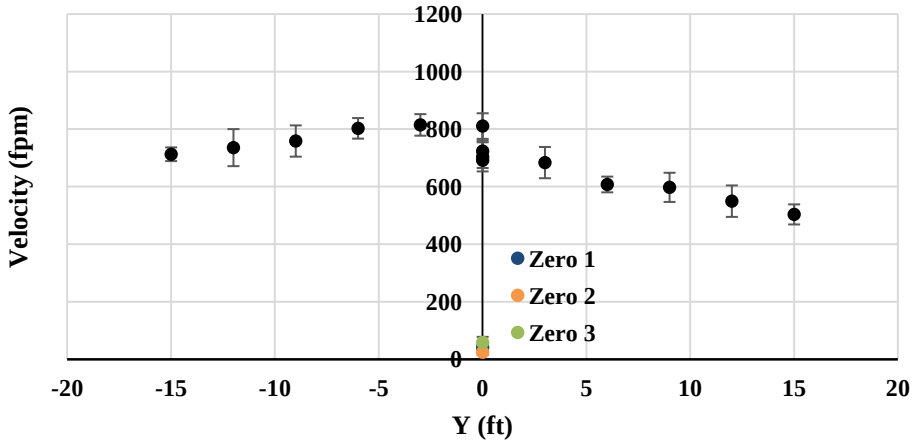


Figure A1. Run 11; lateral survey at X = 61.3 ft, Z = 0.25 ft.

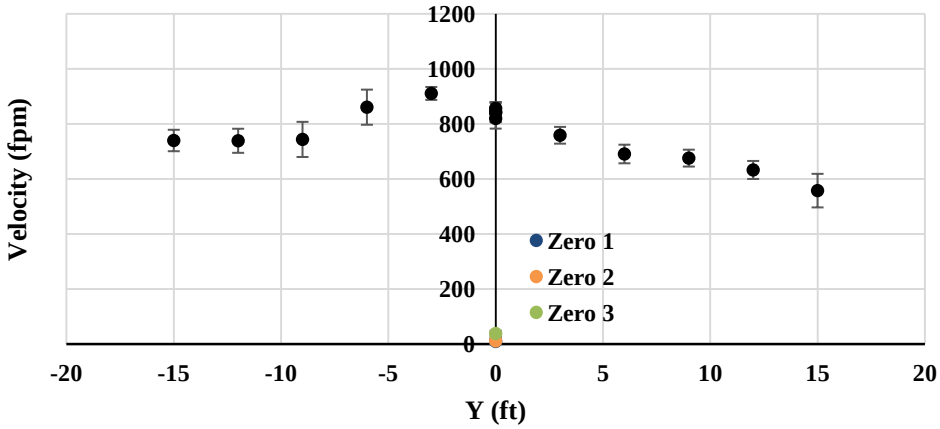


Figure A2. Run 12; lateral survey at X = 61.3 ft, Z = 0.5 ft.

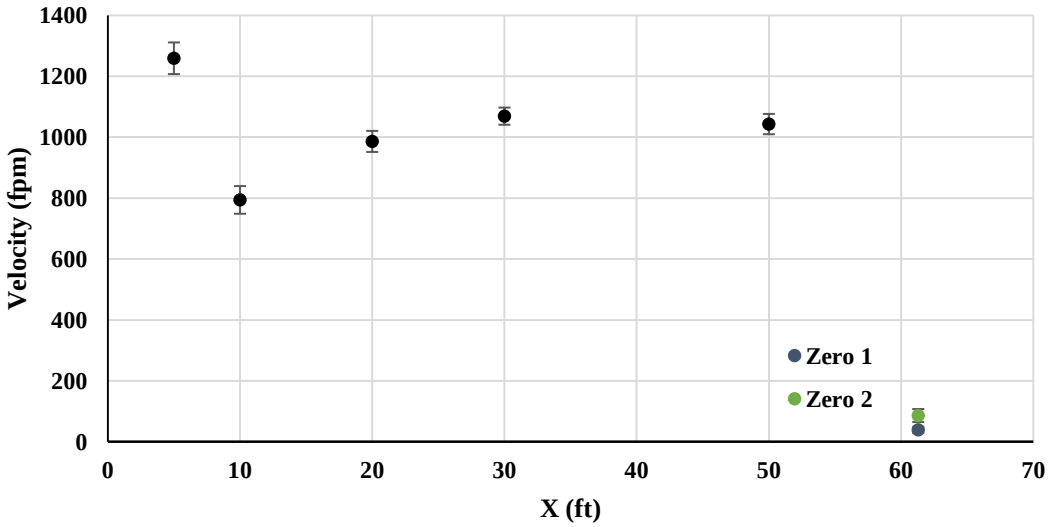


Figure A3. Run 13; streamwise survey at Y = 0 ft, Z = 2 ft.

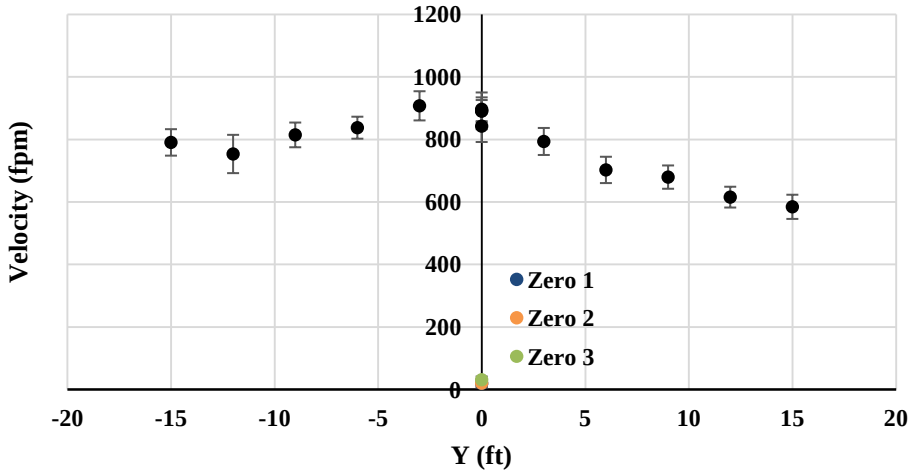


Figure A4. Run14; lateral survey at X = 61.3 ft, Z = 1 ft.

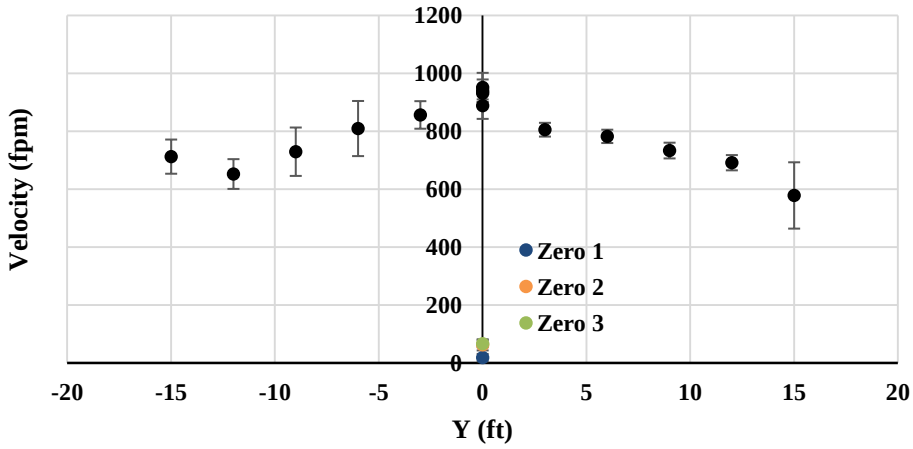


Figure A5. Run 15; lateral survey at X = 61.3 ft, Z = 2 ft.

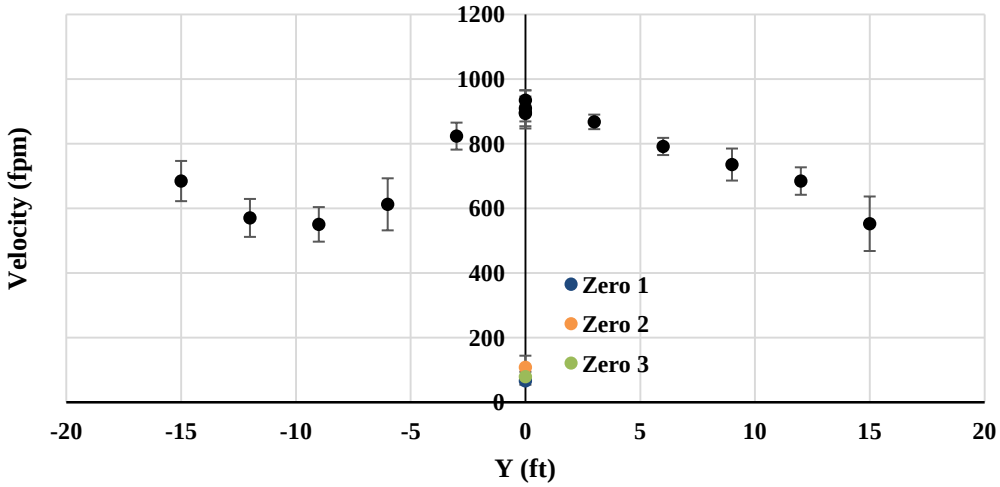


Figure A6. Run 16; lateral survey at X = 61.3 ft, Z = 3 ft.

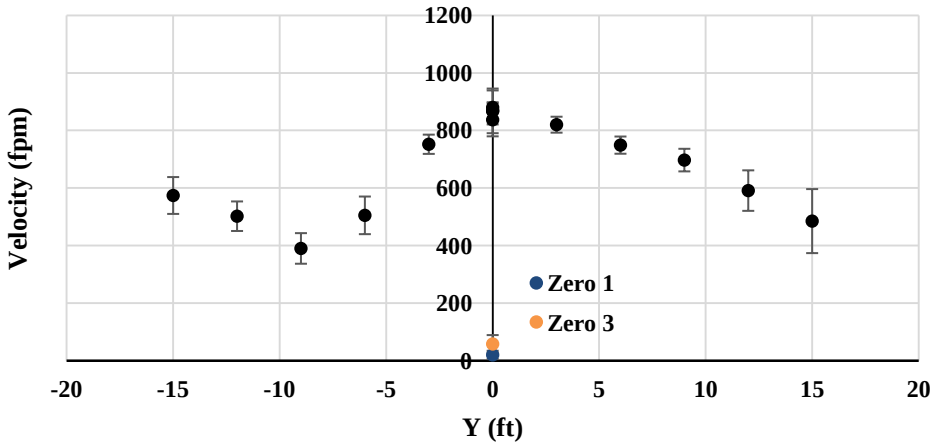


Figure A7. Run 17; lateral survey at X = 61.3 ft, Z = 4 ft.

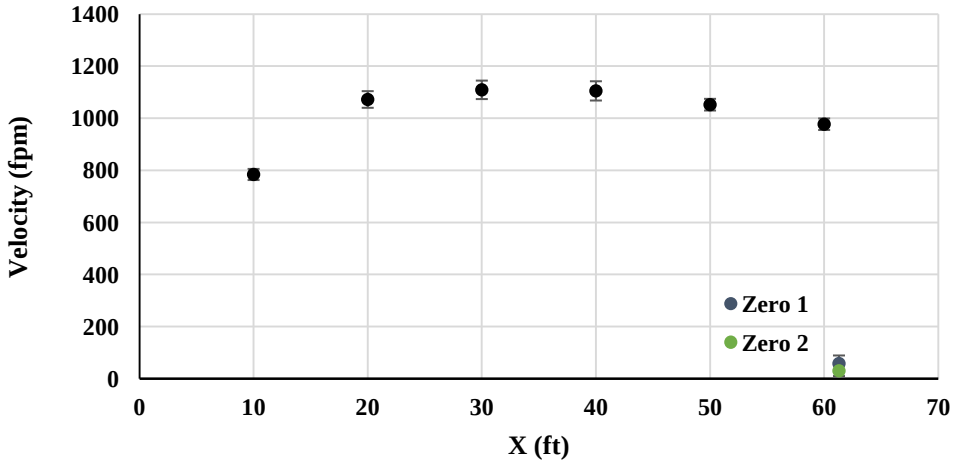


Figure A8. Run 18; streamwise survey at Y = 0 ft, Z = 2 ft.

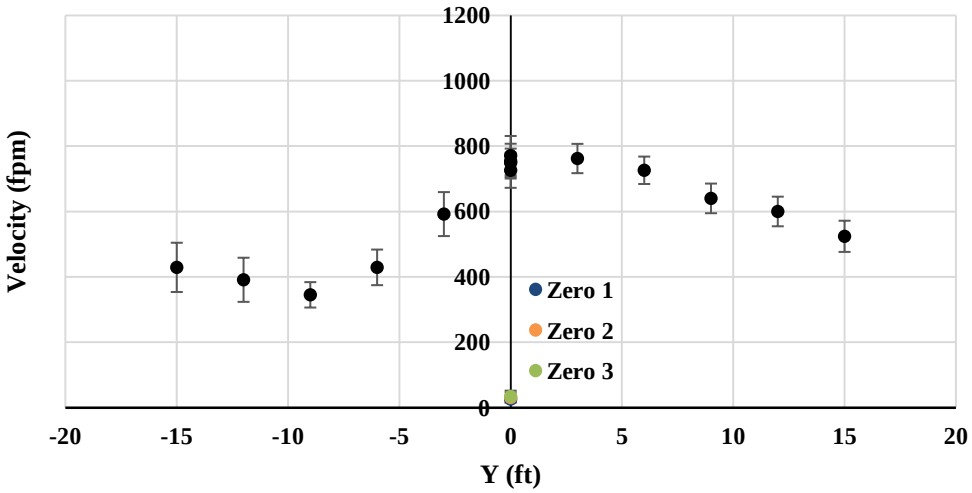


Figure A9. Run 19; lateral survey at X = 61.3 ft, Z = 5 ft.

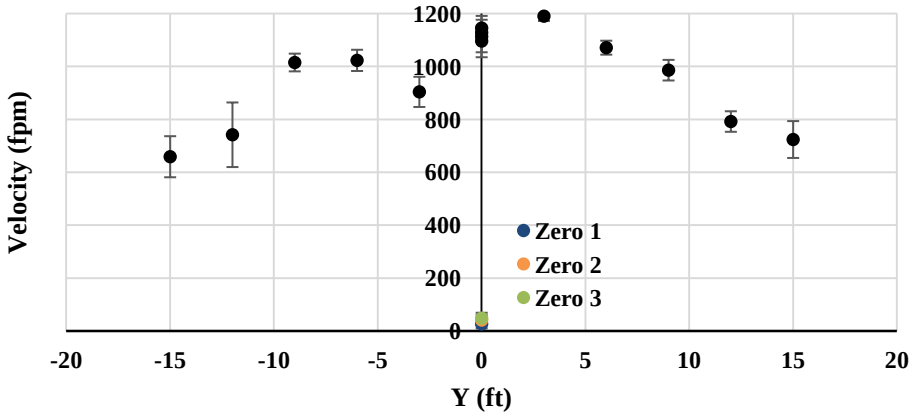


Fig A10. Run 20; lateral survey at X = 26.3 ft, Z = 2 ft.

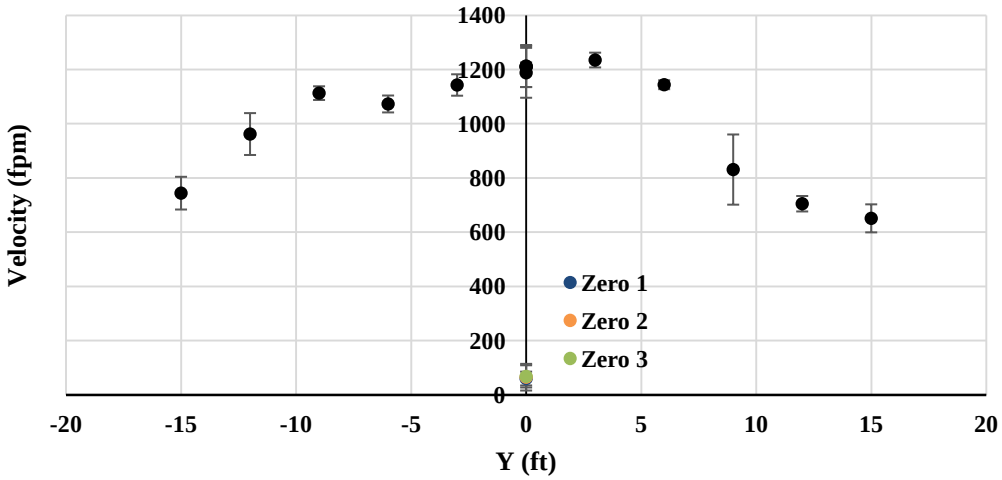


Fig A11. Run 21; lateral survey at X = 26.3 ft, Z = 0.25 ft.

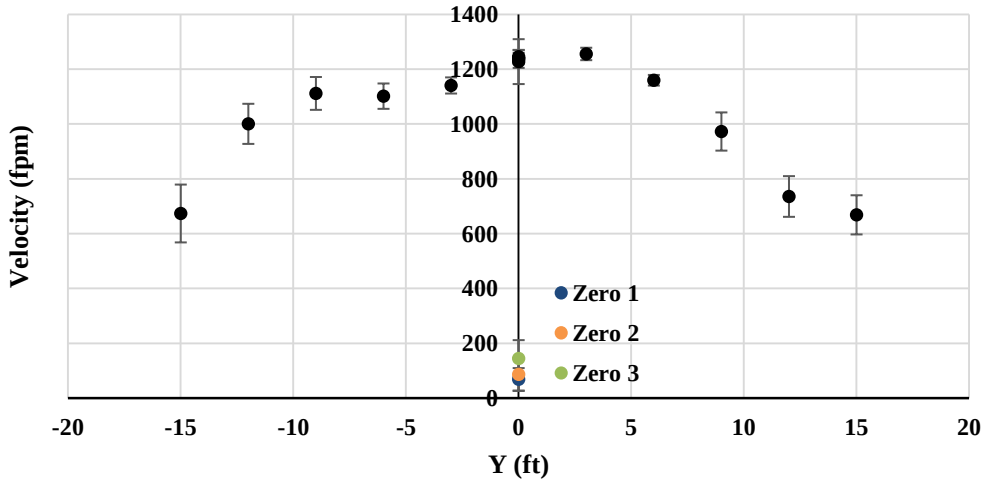


Figure A12. Run 22; lateral survey at X = 26.3 ft, Z = 0.5 ft.

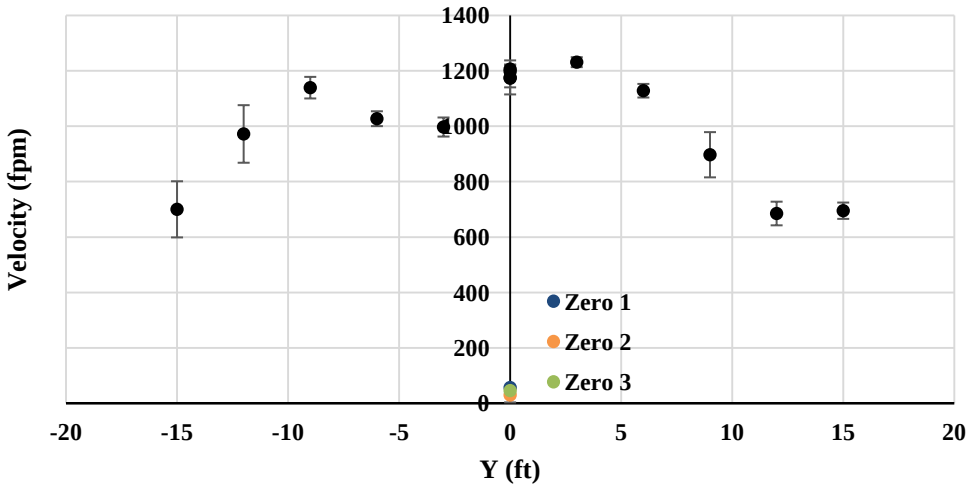


Figure A13. Run 23; lateral survey at X = 26.3 ft, Z = 1 ft.

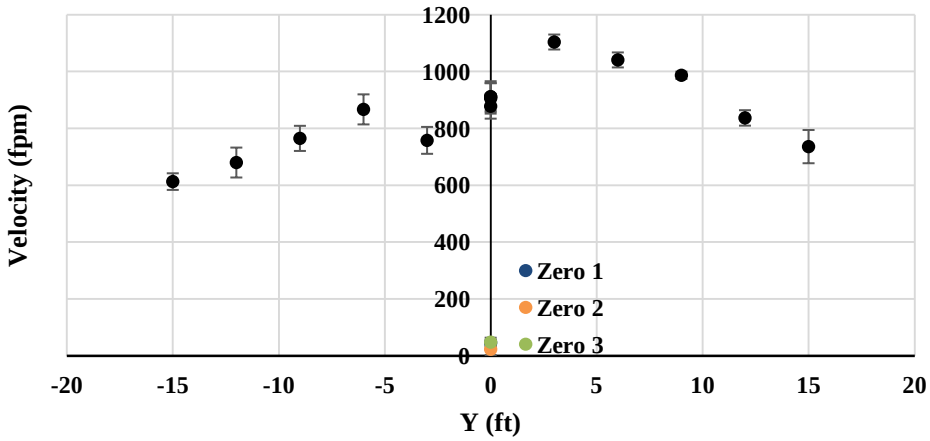


Figure A14. Run 24; lateral survey at X = 26.3 ft, Z = 3 ft.

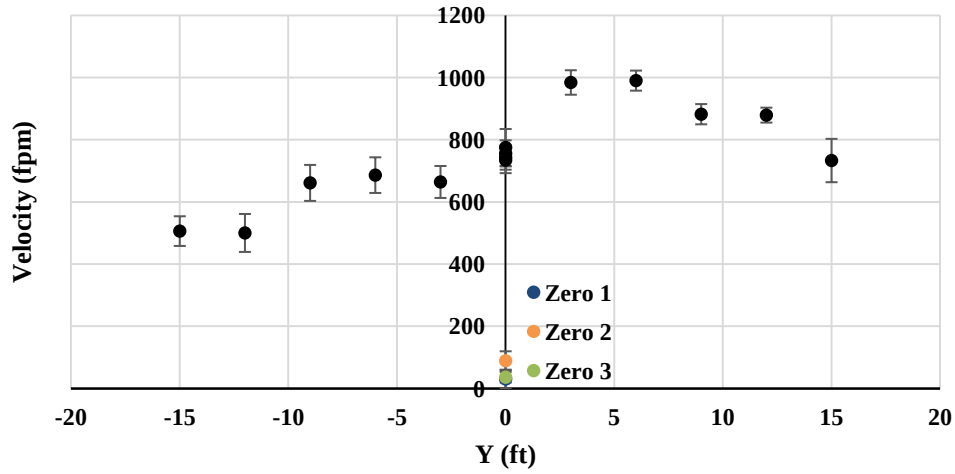


Figure A15. Run 25; lateral survey at X = 26.3 ft, Z = 4 ft.

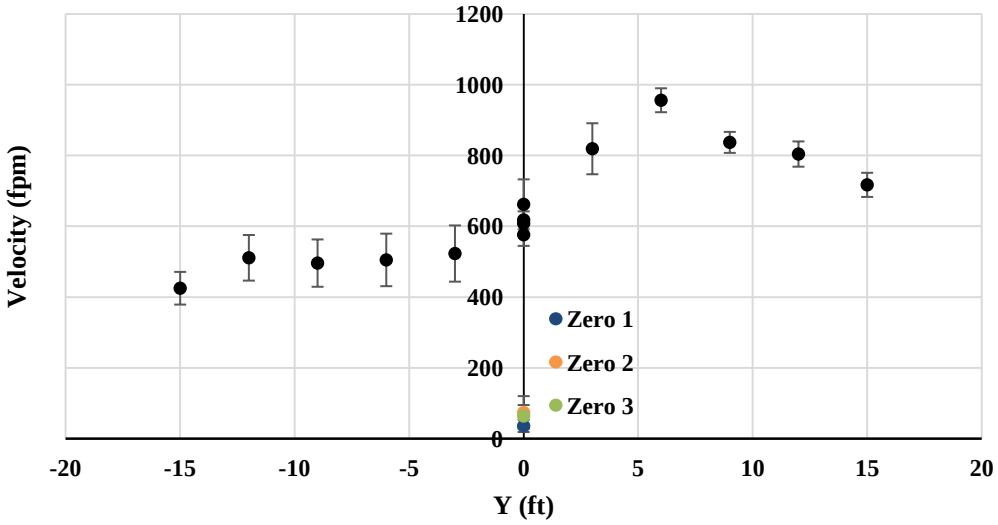


Figure A16. Run 26; lateral survey at X = 26.3 ft, Z = 5 ft.

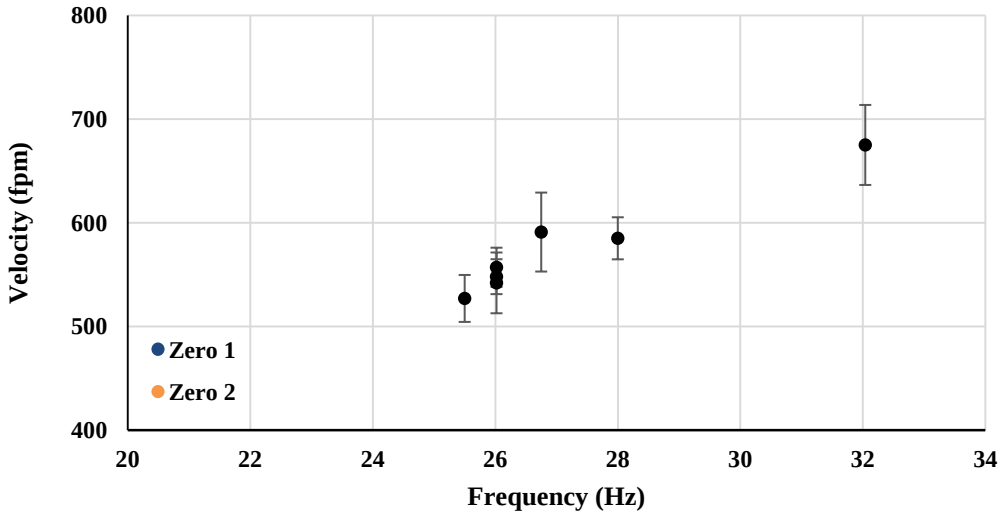


Figure A17. Run 27; determination of fan speed for half-max velocity; X = 26.3 ft, Y = 0 ft, Z = 2 ft.

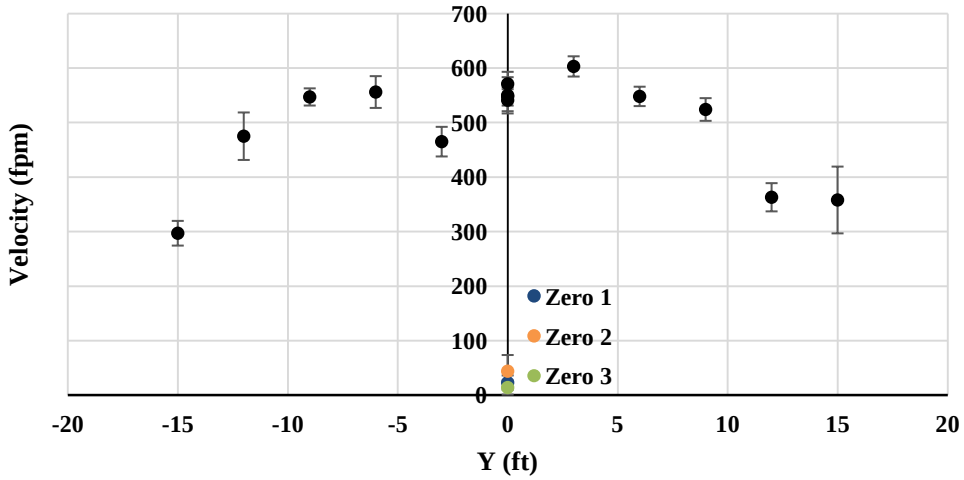


Figure A18. Run 28; lateral survey at X = 26.3 ft, Z = 2 ft (half-max velocity).

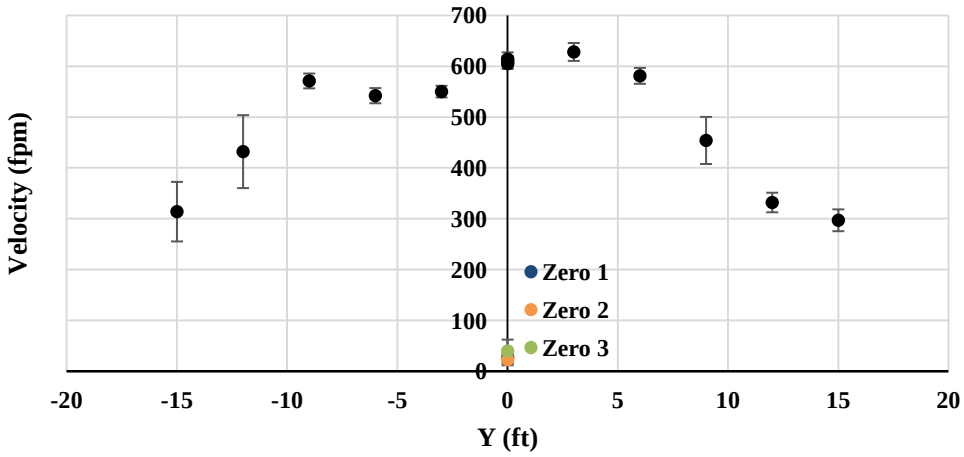


Figure A19. Run 29; lateral survey at X = 26.3 ft, Z = 0.25 ft (half-max velocity).

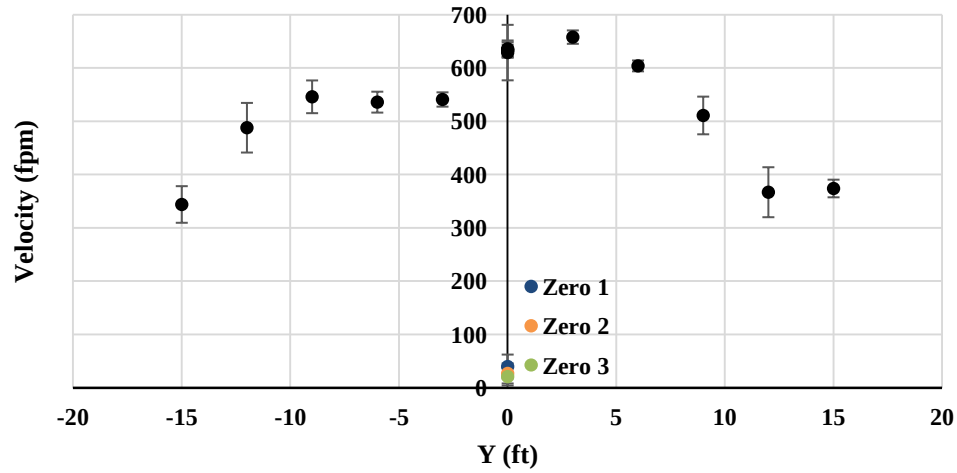


Figure A20. Run 30; lateral survey at X = 26.3 ft, Z = 0.5 ft (half-max velocity).

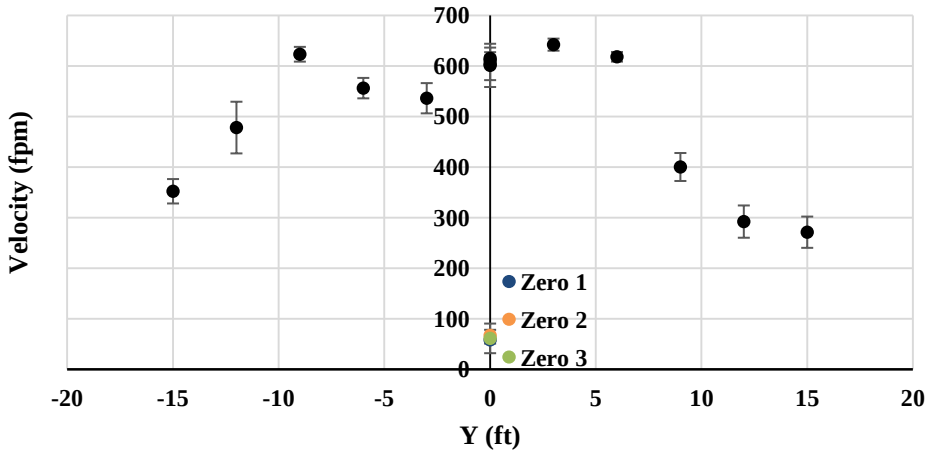


Figure A21. Run 31; lateral survey at X = 26.3 ft, Z = 1 ft (half-max velocity).

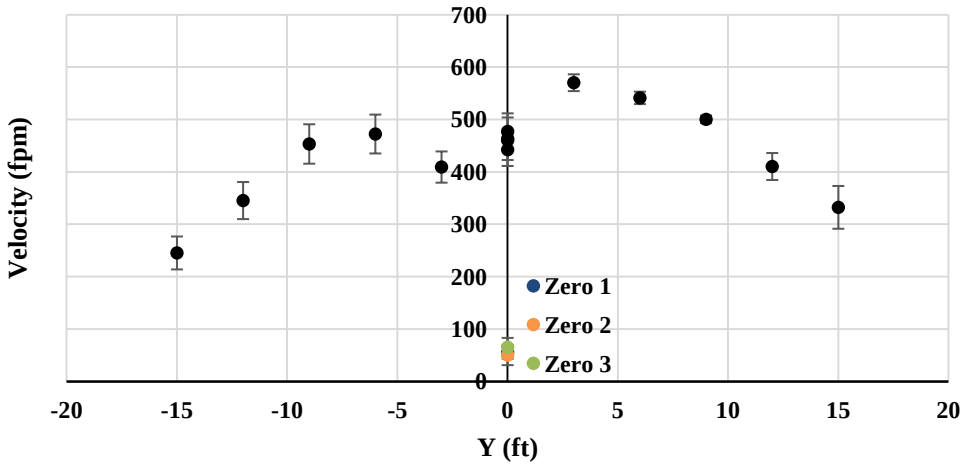


Fig A22. Run 32; lateral survey at X = 26.3 ft, Z = 3 ft (half-max velocity).

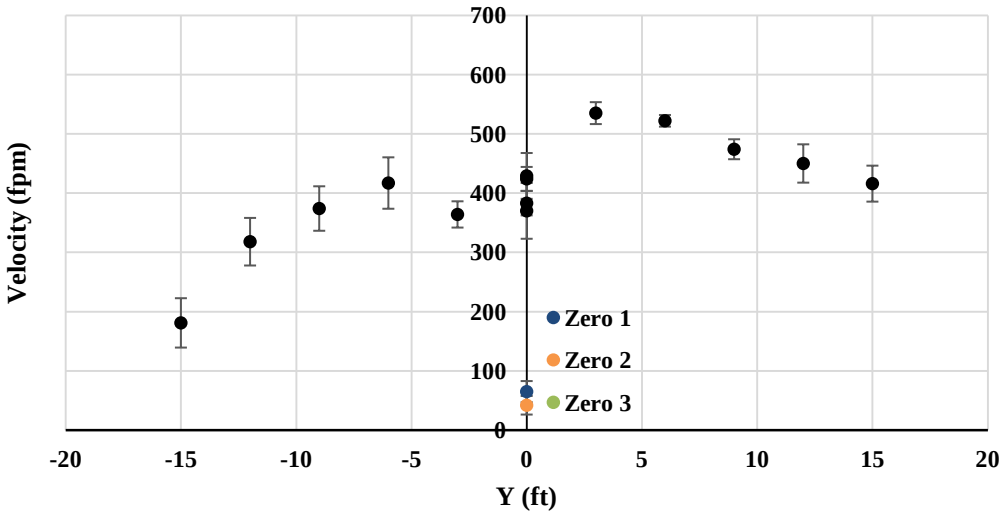


Figure A23. Run 33; lateral survey at X = 26.3 ft, Z = 4 ft (half-max velocity).

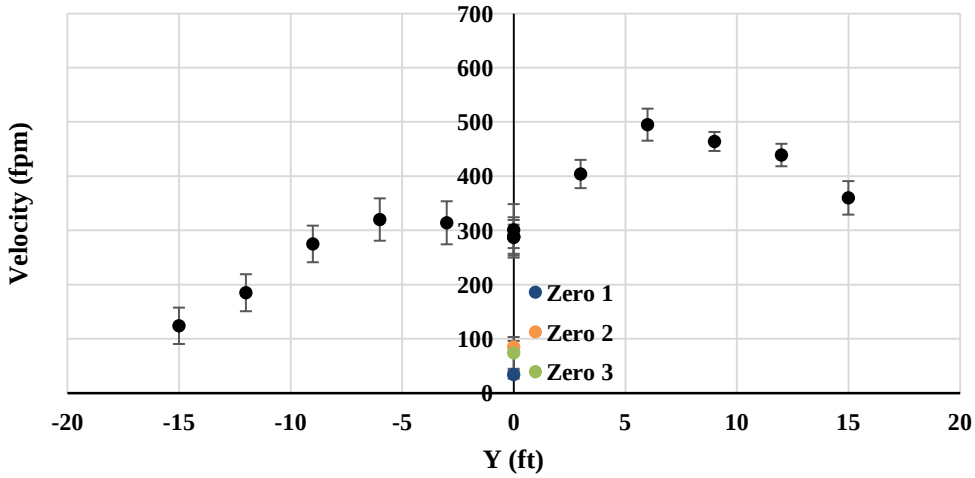


Figure A24. Run 34; lateral survey at X = 26.3 ft, Z = 5 ft (half-max velocity).

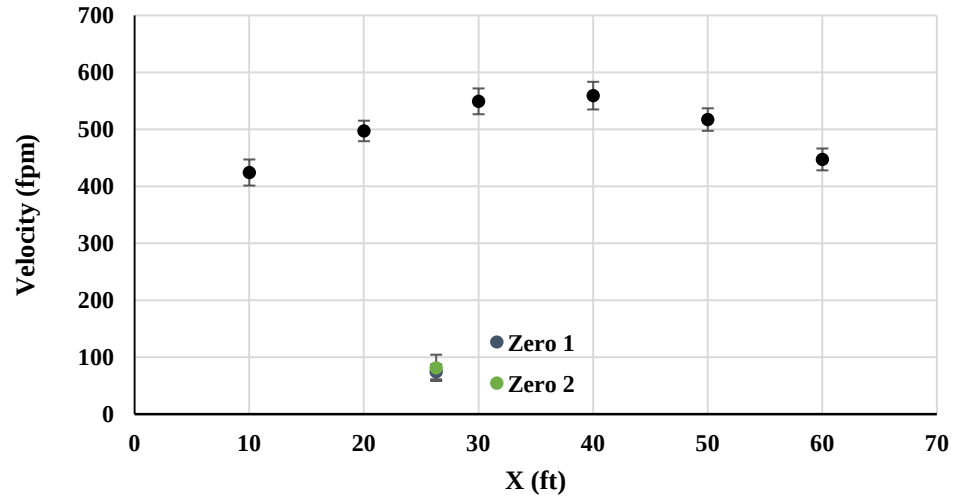


Figure A25. Run 35; streamwise survey at Y = 0 ft, Z = 2 ft (half-max velocity).

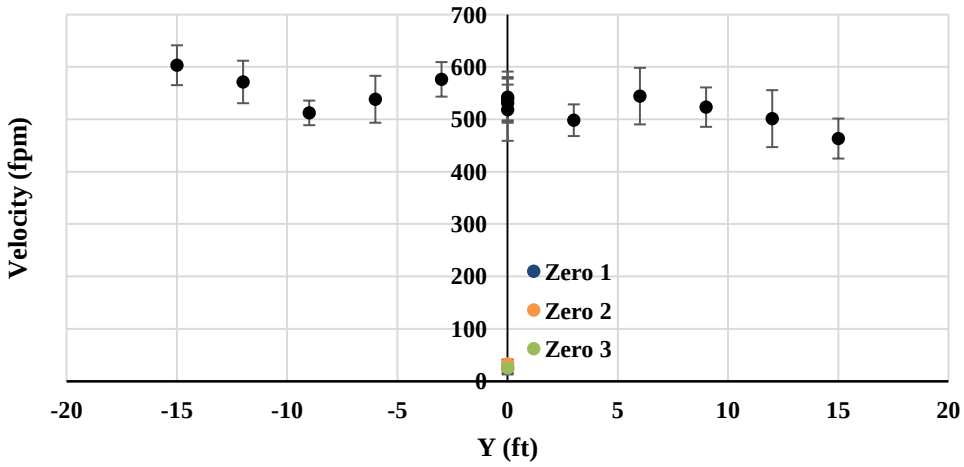


Figure A26. Run 36; lateral survey at X = 61.3 ft, Z = 2 ft (building G1 at X = 26.3 ft, Y = 0 ft).

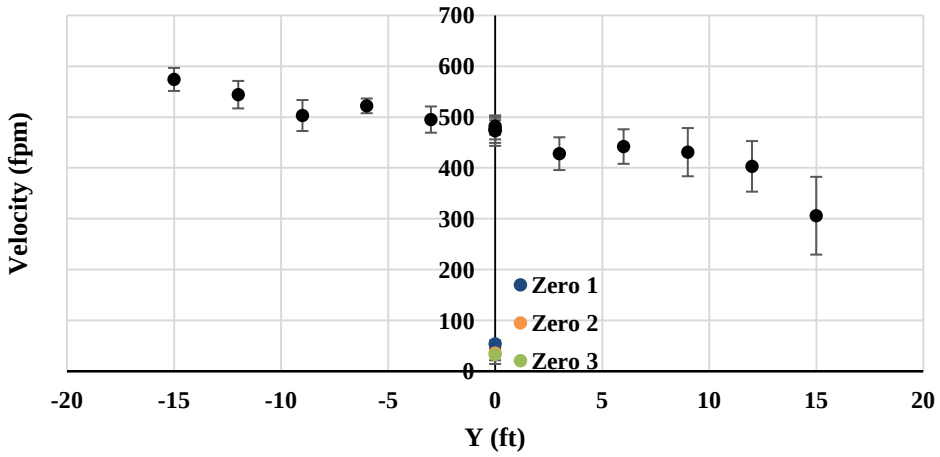


Figure A27. Run 37; lateral survey at X= 61.3 ft, Z = 0.25 ft (building G1 at X = 26.3 ft, Y = 0 ft).

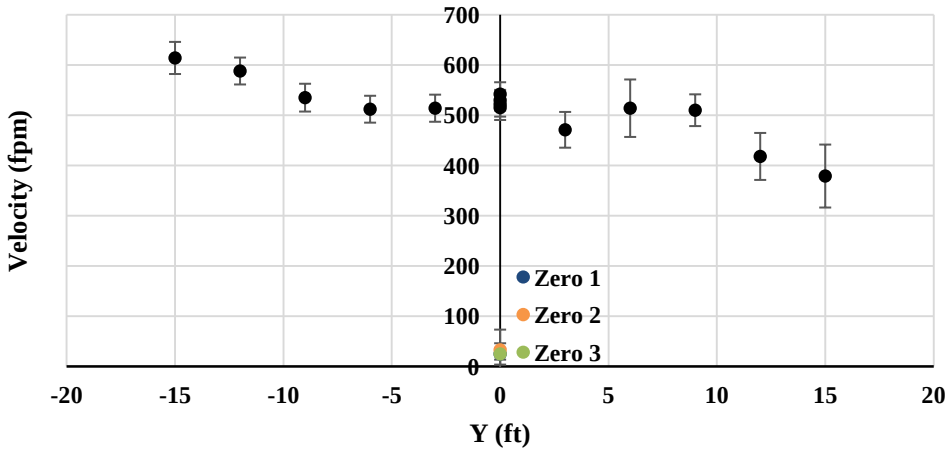


Figure A28. Run 38; lateral survey at X = 61.3 ft, Z = 0.5 ft (building G1 at X = 26.3 ft, Y = 0 ft).

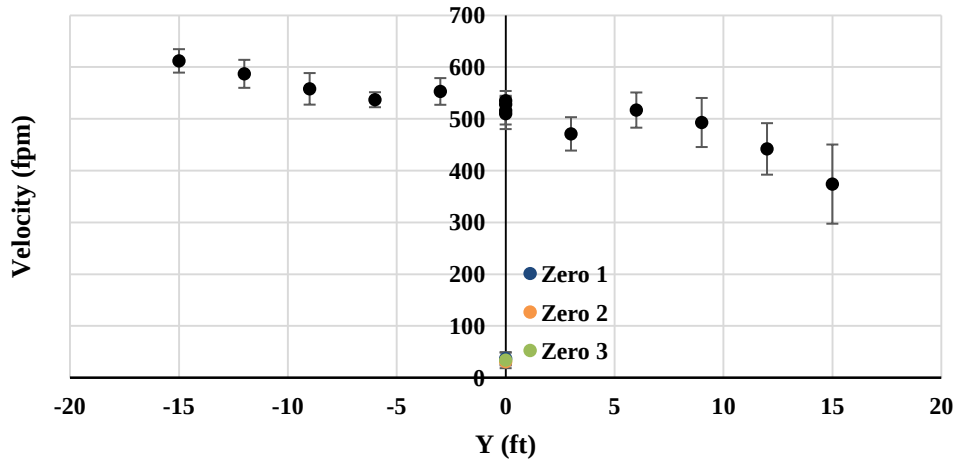


Figure A29. Run 39; lateral survey at X = 61.3 ft, Z = 1 ft (building G1 at X = 26.3 ft, Y = 0 ft).

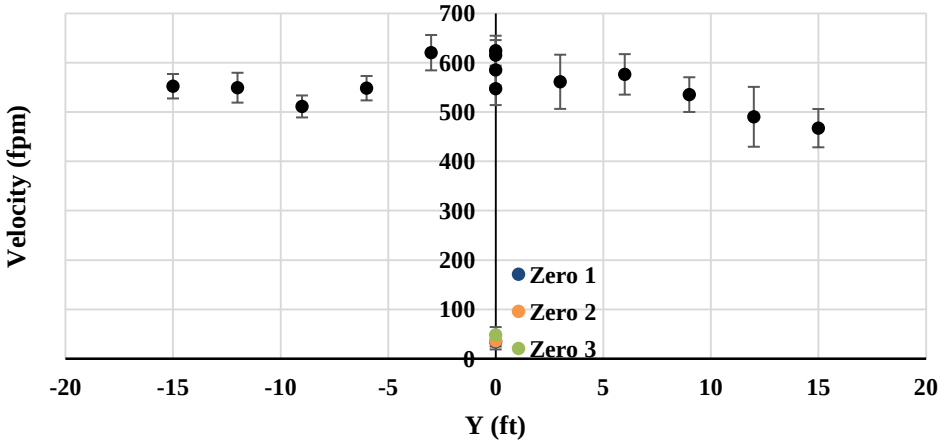


Figure A30. Run 40; lateral survey at X = 61.3 ft, Z = 3 ft (building G1 at X = 26.3 ft, Y = 0 ft).

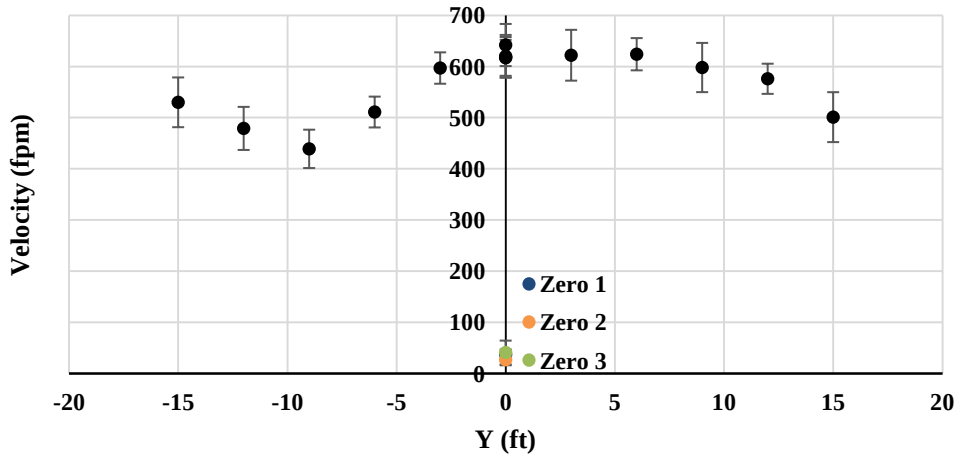


Figure A31. Run 41; lateral survey at X = 61.3 ft, Z = 4 ft (building G1 at X = 26.3 ft, Y = 0 ft).

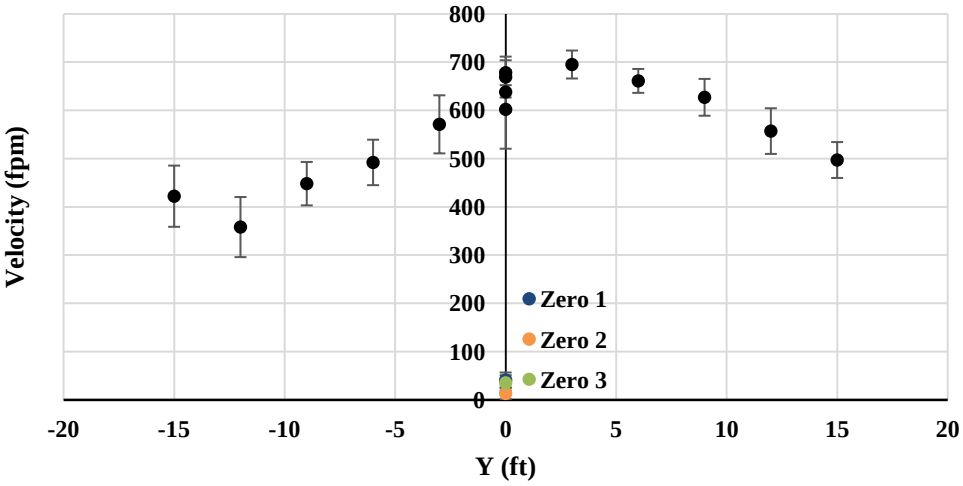


Figure A32. Run 42; lateral survey at X = 61.3 ft, Z = 5 ft (building G1 at X = 26.3 ft, Y = 0 ft).

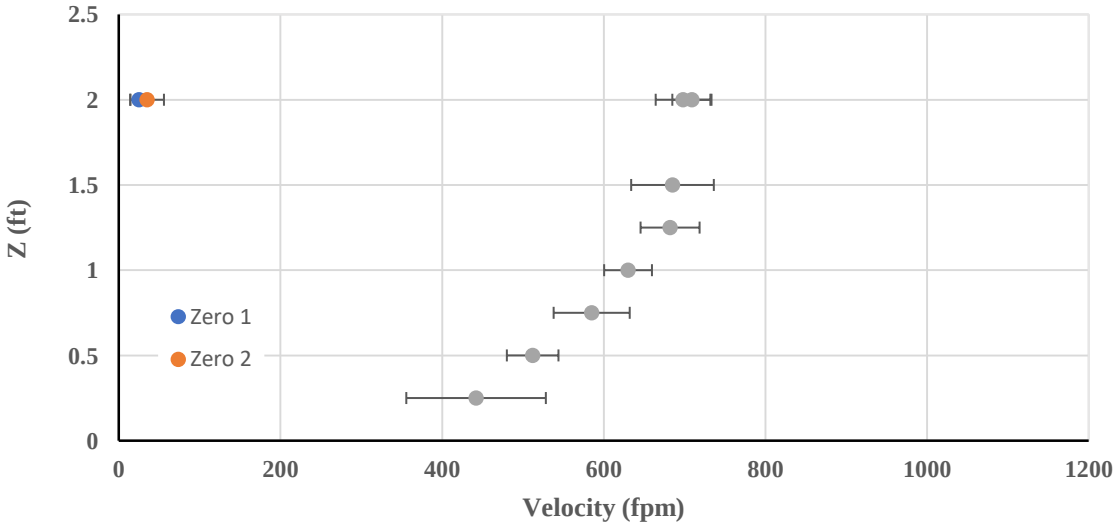


Figure A33. Run 45; vertical survey 4 ft ahead of inlet, Y = 0, max wind, and V_{ts} = 0.

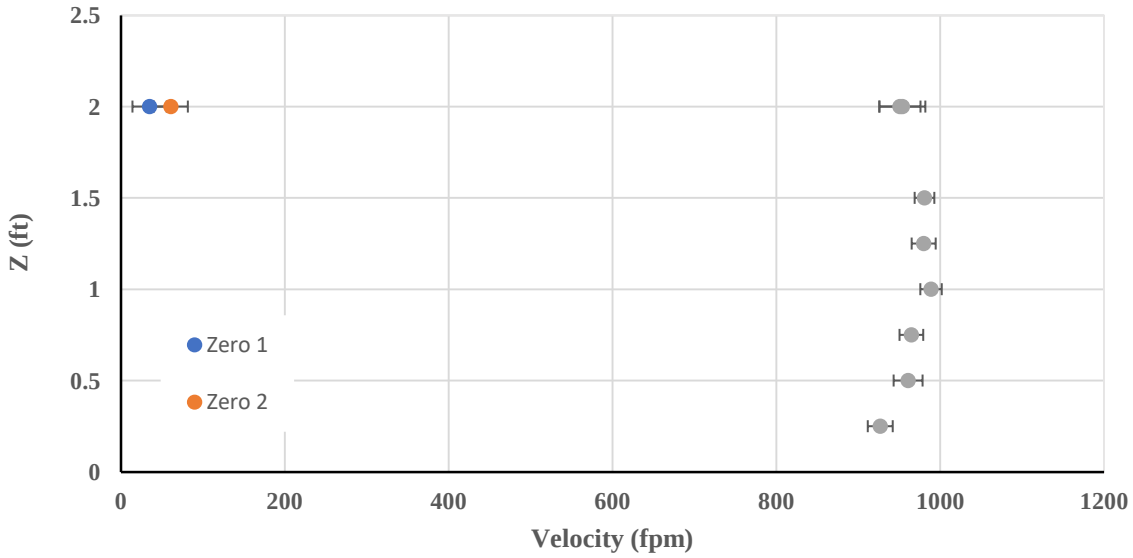


Figure A34. Run 46; vertical survey 4 ft ahead of inlet, Y = 0, max wind, and V_{ts} = 100 kts.

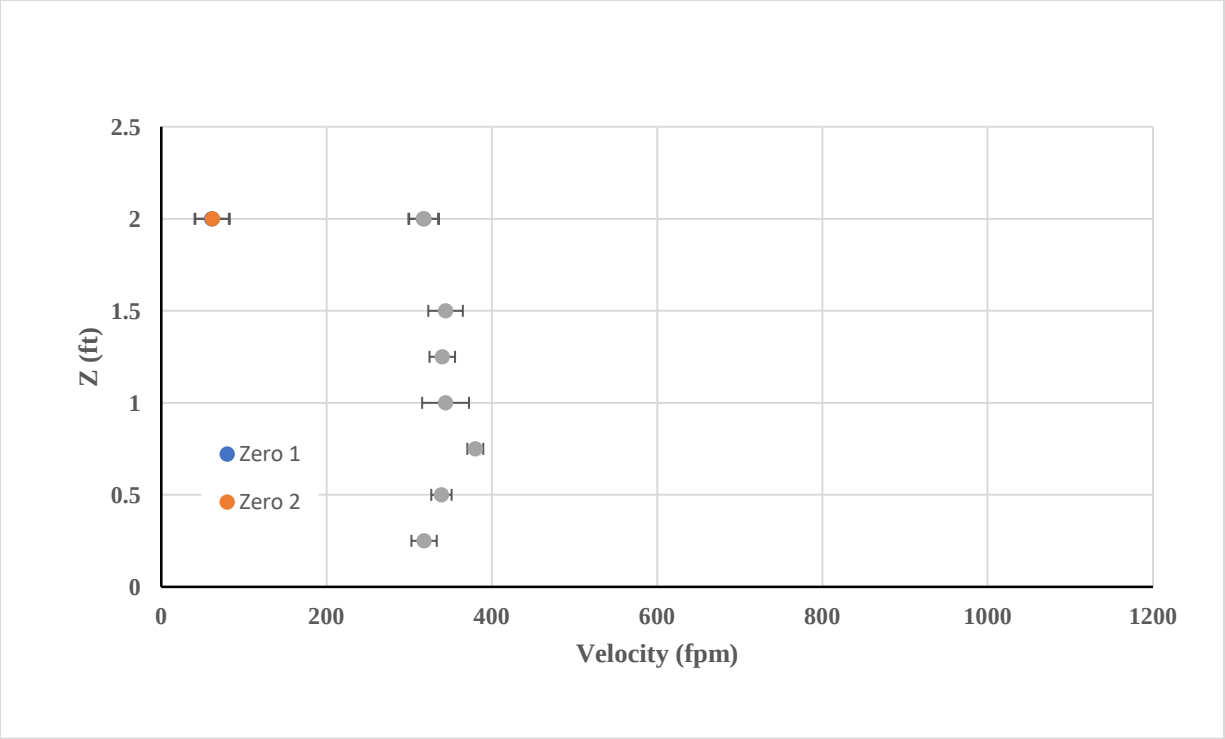


Figure A35. Run 47; vertical survey 4 ft ahead of inlet, no wind, and V_{ts} = 100 kts.

APPENDIX B

COBRA PROBE VELOCITY MEASUREMENTS IN THE 1/50TH-SCALE 80X120 TEST SECTION

Table B1. Cobra Data Table 134

Line and Area Survey Plots (Run 32 to Run 207) 271

Table B1. Cobra Data Table.

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/9/19	13:00	32	2	13	max	25.70	-0.09	-0.14	0.474	0.460	0.499	0.474
5/9/19	13:00	32	3	1	max	25.20	0.03	0.18	0.591	0.494	0.766	0.591
5/9/19	13:00	32	4	2	max	25.40	0.03	-0.34	0.417	0.388	0.352	0.417
5/9/19	13:00	32	5	3	max	25.50	0.53	-0.02	0.471	0.411	0.549	0.471
5/9/19	13:00	32	6	4	max	25.70	0.35	0.38	0.432	0.396	0.433	0.432
5/9/19	13:00	32	7	5	max	25.80	0.04	0.12	0.509	0.471	0.571	0.509
5/9/19	13:00	32	8	6	max	25.30	0.19	0.06	0.450	0.413	0.474	0.450
5/9/19	13:00	32	9	7	max	25.60	-0.15	-0.18	0.411	0.386	0.412	0.411
5/9/19	13:00	32	10	8	max	25.60	0.03	0.07	0.438	0.398	0.486	0.438
5/9/19	13:00	32	11	9	max	25.80	0.07	-0.13	0.464	0.425	0.529	0.464
5/9/19	13:00	32	12	10	max	25.90	0.66	-0.18	0.452	0.393	0.474	0.452
5/9/19	13:00	32	13	11	max	25.50	-0.04	-0.05	0.562	0.514	0.658	0.562
5/9/19	13:00	32	14	12	max	25.60	-0.11	-0.42	0.485	0.467	0.451	0.485
5/9/19	13:00	32	15	13	max	25.70	-0.08	-0.11	0.481	0.470	0.505	0.481
5/9/19	13:00	32	16	14	max	25.80	0.08	0.10	0.456	0.440	0.453	0.456
5/9/19	13:00	32	17	15	max	26.10	0.12	0.05	0.544	0.489	0.650	0.544
5/9/19	13:00	32	18	16	max	25.40	-0.04	0.16	0.445	0.411	0.535	0.445
5/9/19	13:00	32	19	17	max	25.50	-0.44	0.04	0.458	0.401	0.523	0.458
5/9/19	13:00	32	20	18	max	25.70	-0.04	-0.08	0.419	0.397	0.440	0.419
5/9/19	13:00	32	21	19	max	25.80	0.04	0.05	0.417	0.393	0.432	0.417
5/9/19	13:00	32	22	20	max	25.90	-0.35	-0.12	0.431	0.381	0.485	0.431
5/9/19	13:00	32	23	21	max	25.30	0.11	0.03	0.485	0.429	0.560	0.485
5/9/19	13:00	32	24	22	max	25.40	-0.01	-0.41	0.470	0.436	0.472	0.470
5/9/19	13:00	32	25	23	max	25.60	-0.10	0.17	0.435	0.417	0.436	0.435
5/9/19	13:00	32	26	24	max	25.60	-0.13	0.51	0.477	0.449	0.437	0.477
5/9/19	13:00	32	27	25	max	25.90	-0.11	-0.02	0.512	0.479	0.548	0.512
5/9/19	13:00	32	28	13	max	25.70	-0.06	-0.10	0.481	0.462	0.508	0.481
5/9/19	14:47	33	2	13	max	25.70	-0.08	-0.09	0.488	0.469	0.489	0.488
5/9/19	14:47	33	3	1	max	25.10	0.02	0.17	0.601	0.508	0.769	0.601
5/9/19	14:47	33	4	2	max	25.30	0.04	-0.36	0.425	0.400	0.355	0.425

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/9/19	14:47	33	5	3	max	25.50	0.56	-0.03	0.463	0.402	0.531	0.463
5/9/19	14:47	33	6	4	max	25.60	0.36	0.35	0.430	0.389	0.440	0.430
5/9/19	14:47	33	7	5	max	25.80	0.07	0.13	0.518	0.489	0.580	0.518
5/9/19	14:47	33	8	6	max	25.30	0.13	0.14	0.460	0.420	0.477	0.460
5/9/19	14:47	33	9	7	max	25.50	-0.06	-0.14	0.396	0.371	0.413	0.396
5/9/19	14:47	33	10	8	max	25.50	0.32	0.07	0.445	0.390	0.502	0.445
5/9/19	14:47	33	11	9	max	25.80	0.12	-0.14	0.453	0.404	0.532	0.453
5/9/19	14:47	33	12	10	max	25.80	0.55	-0.19	0.458	0.379	0.540	0.458
5/9/19	14:47	33	13	11	max	25.40	-0.03	-0.04	0.552	0.507	0.645	0.552
5/9/19	14:47	33	14	12	max	25.50	-0.07	-0.36	0.492	0.463	0.464	0.492
5/9/19	14:47	33	15	13	max	25.60	-0.07	-0.10	0.497	0.482	0.498	0.497
5/9/19	14:47	33	16	14	max	25.80	0.08	0.03	0.457	0.433	0.452	0.457
5/9/19	14:47	33	17	15	max	26.00	0.10	0.00	0.527	0.467	0.641	0.527
5/9/19	14:47	33	18	16	max	25.40	-0.04	0.12	0.495	0.424	0.628	0.495
5/9/19	14:47	33	19	17	max	25.50	-0.45	-0.02	0.503	0.440	0.575	0.503
5/9/19	14:47	33	20	18	max	25.70	-0.05	-0.10	0.424	0.402	0.446	0.424
5/9/19	14:47	33	21	19	max	25.80	0.07	0.08	0.412	0.380	0.440	0.412
5/9/19	14:47	33	22	20	max	25.90	-0.03	-0.13	0.440	0.389	0.499	0.440
5/9/19	14:47	33	23	21	max	25.30	0.08	0.02	0.455	0.425	0.476	0.455
5/9/19	14:47	33	24	22	max	25.40	0.00	-0.43	0.486	0.452	0.499	0.486
5/9/19	14:47	33	25	23	max	25.60	-0.14	0.17	0.453	0.441	0.468	0.453
5/9/19	14:47	33	26	24	max	25.70	-0.14	0.62	0.452	0.430	0.471	0.452
5/9/19	14:47	33	27	25	max	25.90	-0.13	-0.03	0.537	0.521	0.573	0.537
5/9/19	14:47	33	28	13	max	25.70	-0.05	-0.08	0.494	0.480	0.496	0.494
5/9/19	15:22	34	2	13	max	25.60	-0.08	-0.09	0.481	0.507	0.507	0.499
5/9/19	15:22	34	3	1	max	25.20	0.02	0.16	0.525	0.809	0.512	0.630
5/9/19	15:22	34	4	2	max	25.30	0.04	-0.37	0.405	0.365	0.524	0.437
5/9/19	15:22	34	5	3	max	25.40	0.56	-0.05	0.413	0.543	0.474	0.480
5/9/19	15:22	34	6	4	max	25.60	0.37	0.33	0.389	0.453	0.472	0.439
5/9/19	15:22	34	7	5	max	25.80	0.13	0.09	0.468	0.575	0.493	0.514

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/9/19	15:22	34	8	6	max	25.20	0.10	0.13	0.450	0.545	0.540	0.513
5/9/19	15:22	34	9	7	max	25.50	-0.02	-0.13	0.365	0.449	0.415	0.411
5/9/19	15:22	34	10	8	max	25.50	0.32	0.05	0.422	0.545	0.465	0.480
5/9/19	15:22	34	11	9	max	25.70	0.17	-0.12	0.372	0.533	0.377	0.434
5/9/19	15:22	34	12	10	max	25.80	0.43	-0.18	0.371	0.613	0.433	0.483
5/9/19	15:22	34	13	11	max	25.30	-0.03	-0.02	0.501	0.641	0.502	0.552
5/9/19	15:22	34	14	12	max	25.50	-0.06	-0.03	0.443	0.488	0.491	0.474
5/9/19	15:22	34	15	13	max	25.60	-0.06	-0.07	0.485	0.509	0.502	0.498
5/9/19	15:22	34	16	14	max	25.80	0.10	0.00	0.428	0.474	0.483	0.462
5/9/19	15:22	34	17	15	max	26.00	0.05	0.00	0.456	0.597	0.476	0.514
5/9/19	15:22	34	18	16	max	25.30	-0.04	0.13	0.452	0.676	0.438	0.533
5/9/19	15:22	34	19	17	max	25.50	-0.44	-0.03	0.448	0.615	0.548	0.542
5/9/19	15:22	34	20	18	max	25.70	-0.10	-0.10	0.405	0.526	0.416	0.453
5/9/19	15:22	34	21	19	max	25.80	0.04	0.08	0.369	0.490	0.415	0.428
5/9/19	15:22	34	22	20	max	25.90	-0.03	-0.11	0.405	0.571	0.455	0.482
5/9/19	15:22	34	23	21	max	25.30	0.12	0.02	0.485	0.545	0.502	0.511
5/9/19	15:22	34	24	22	max	25.50	-0.04	-0.45	0.451	0.519	0.525	0.499
5/9/19	15:22	34	25	23	max	25.60	-0.15	0.15	0.411	0.474	0.457	0.448
5/9/19	15:22	34	26	24	max	25.60	-0.02	0.62	0.455	0.535	0.467	0.487
5/9/19	15:22	34	27	25	max	25.90	-0.13	-0.03	0.543	0.664	0.585	0.599
5/9/19	15:22	34	28	13	max	25.60	-0.03	-0.06	0.474	0.517	0.486	0.492
5/9/19	15:58	35	2	13	max	25.70	-0.07	-0.10	0.479	0.526	0.513	0.507
5/9/19	15:58	35	3	1	max	25.20	0.02	0.16	0.587	0.936	0.589	0.723
5/9/19	15:58	35	4	2	max	25.40	0.04	-0.35	0.415	0.407	0.559	0.465
5/9/19	15:58	35	5	3	max	25.50	0.57	-0.06	0.455	0.589	0.527	0.526
5/9/19	15:58	35	6	4	max	25.60	0.37	0.33	0.404	0.479	0.491	0.460
5/9/19	15:58	35	7	5	max	25.80	0.12	0.09	0.480	0.603	0.523	0.538
5/9/19	15:58	35	8	6	max	25.30	0.07	0.13	0.471	0.585	0.590	0.552

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/9/19	15:58	35	9	7	max	25.50	-0.01	-0.12	0.418	0.522	0.451	0.466
5/9/19	15:58	35	10	8	max	25.60	0.32	0.04	0.424	0.560	0.492	0.495
5/9/19	15:58	35	11	9	max	25.80	0.18	-0.11	0.396	0.596	0.407	0.475
5/9/19	15:58	35	12	10	max	25.90	0.42	-0.16	0.385	0.612	0.452	0.492
5/9/19	15:58	35	13	11	max	25.30	-0.05	0.00	0.494	0.638	0.515	0.553
5/9/19	15:58	35	14	12	max	25.50	-0.07	-0.02	0.471	0.491	0.526	0.496
5/9/19	15:58	35	15	13	max	25.70	-0.05	-0.07	0.479	0.529	0.503	0.504
5/9/19	15:58	35	16	14	max	25.80	0.10	0.00	0.421	0.479	0.488	0.464
5/9/19	15:58	35	17	15	max	26.10	0.05	0.01	0.459	0.634	0.490	0.533
5/9/19	15:58	35	18	16	max	25.40	-0.06	0.14	0.475	0.711	0.514	0.576
5/9/19	15:58	35	19	17	max	25.50	-0.39	0.01	0.527	0.707	0.644	0.631
5/9/19	15:58	35	20	18	max	25.70	-0.13	-0.10	0.436	0.591	0.453	0.498
5/9/19	15:58	35	21	19	max	25.80	0.02	0.07	0.372	0.529	0.445	0.453
5/9/19	15:58	35	22	20	max	25.90	-0.03	-0.08	0.416	0.728	0.550	0.579
5/9/19	15:58	35	23	21	max	25.30	0.12	0.02	0.475	0.607	0.549	0.546
5/9/19	15:58	35	24	22	max	25.50	-0.07	-0.44	0.467	0.535	0.542	0.516
5/9/19	15:58	35	25	23	max	25.60	-0.19	0.14	0.458	0.541	0.537	0.513
5/9/19	15:58	35	26	24	max	25.70	-0.37	0.46	0.549	0.955	0.903	0.822
5/9/19	15:58	35	27	25	max	25.90	-0.17	-0.15	0.574	0.713	0.766	0.689
5/9/19	15:58	35	28	13	max	25.70	-0.03	-0.07	0.464	0.523	0.497	0.495
5/14/19	9:44	38	2	13	max	25.70	-0.08	-0.12	0.472	0.503	0.464	0.480
5/14/19	9:44	38	3	1	max	25.20	0.02	0.19	0.505	0.783	0.471	0.603
5/14/19	9:44	38	4	2	max	25.40	0.05	-0.34	0.393	0.358	0.515	0.427
5/14/19	9:44	38	5	3	max	25.60	0.57	-0.02	0.418	0.558	0.444	0.477
5/14/19	9:44	38	6	4	max	25.60	0.38	0.39	0.403	0.437	0.472	0.438
5/14/19	9:44	38	7	5	max	25.80	0.10	0.10	0.482	0.561	0.499	0.515
5/14/19	9:44	38	8	6	max	25.30	0.02	0.07	0.396	0.468	0.471	0.446
5/14/19	9:44	38	9	7	max	25.50	-0.12	-0.15	0.406	0.428	0.436	0.424

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/14/19	9:44	38	10	8	max	25.60	0.03	0.09	0.399	0.494	0.433	0.443
5/14/19	9:44	38	11	9	max	25.80	0.09	-0.12	0.436	0.538	0.437	0.473
5/14/19	9:44	38	12	10	max	25.90	0.65	-0.02	0.413	0.498	0.483	0.466
5/14/19	9:44	38	13	11	max	25.40	-0.02	-0.03	0.537	0.674	0.500	0.576
5/14/19	9:44	38	14	12	max	25.50	-0.09	-0.39	0.474	0.452	0.542	0.491
5/14/19	9:44	38	15	13	max	25.70	-0.07	-0.10	0.463	0.509	0.477	0.483
5/14/19	9:44	38	16	14	max	25.80	0.08	0.09	0.445	0.467	0.471	0.461
5/14/19	9:44	38	17	15	max	26.10	0.13	0.05	0.498	0.659	0.477	0.551
5/14/19	9:44	38	18	16	max	25.40	-0.02	0.15	0.415	0.548	0.383	0.454
5/14/19	9:44	38	19	17	max	25.40	-0.38	0.04	0.433	0.536	0.465	0.480
5/14/19	9:44	38	20	18	max	25.70	-0.04	-0.08	0.415	0.450	0.416	0.427
5/14/19	9:44	38	21	19	max	25.80	0.06	0.05	0.404	0.434	0.427	0.422
5/14/19	9:44	38	22	20	max	25.90	-0.03	-0.12	0.391	0.479	0.422	0.432
5/14/19	9:44	38	23	21	max	25.30	0.12	0.03	0.436	0.554	0.451	0.483
5/14/19	9:44	38	24	22	max	25.40	-0.02	-0.41	0.426	0.485	0.499	0.471
5/14/19	9:44	38	25	23	max	25.60	-0.09	0.19	0.401	0.426	0.457	0.429
5/14/19	9:44	38	26	24	max	25.70	-0.10	0.54	0.449	0.442	0.533	0.476
5/14/19	9:44	38	27	25	max	25.90	-0.09	-0.03	0.485	0.580	0.514	0.528
5/14/19	9:44	38	28	13	max	25.70	-0.03	-0.09	0.467	0.519	0.467	0.485
5/14/19	10:23	39	2	13	none	5.03	-0.01	0.01	1.250	1.000	0.916	1.070
5/14/19	10:23	39	3	13	none	7.52	-0.03	0.04	0.683	0.707	0.706	0.699
5/14/19	10:23	39	5	13	none	10.00	-0.07	0.10	0.535	0.608	0.540	0.562
5/14/19	10:23	39	6	13	none	15.00	-0.03	0.07	0.462	0.507	0.513	0.495
5/14/19	10:23	39	7	13	none	20.00	-0.04	0.00	0.442	0.561	0.463	0.491
5/14/19	10:23	39	8	13	none	25.00	-0.08	-0.09	0.426	0.481	0.444	0.451
5/14/19	10:23	39	9	13	none	30.00	-0.09	-0.03	0.399	0.440	0.438	0.426
5/14/19	10:23	39	10	13	none	40.00	-0.07	-0.18	0.361	0.385	0.393	0.380
5/14/19	10:23	39	12	13	none	50.00	-0.03	-0.30	0.340	0.407	0.344	0.365

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/14/19	10:23	39	13	13	75%	50.00	-0.04	-0.03	0.333	0.392	0.353	0.360
5/14/19	10:23	39	14	13	75%	4.99	-0.02	-0.02	1.890	0.917	1.020	1.350
5/14/19	10:23	39	15	13	75%	7.45	-0.03	0.01	1.090	0.691	0.785	0.871
5/14/19	10:23	39	16	13	75%	10.00	-0.05	0.02	0.717	0.596	0.668	0.662
5/14/19	10:23	39	17	13	75%	15.00	-0.04	0.00	0.553	0.561	0.572	0.562
5/14/19	10:23	39	18	13	75%	20.00	-0.05	-0.05	0.486	0.588	0.507	0.529
5/14/19	10:23	39	19	13	75%	30.00	-0.09	-0.06	0.413	0.465	0.445	0.441
5/14/19	10:23	39	20	13	75%	40.00	-0.06	-0.18	0.373	0.409	0.402	0.395
5/14/19	10:23	39	21	13	max	50.00	-0.03	-0.30	0.344	0.419	0.356	0.374
5/14/19	10:23	39	22	13	max	5.00	-0.01	-0.03	3.190	1.010	1.110	2.040
5/14/19	10:23	39	23	13	max	7.44	-0.03	-0.04	1.520	0.692	0.819	1.070
5/14/19	10:23	39	24	13	max	9.96	-0.04	0.00	1.020	0.601	0.739	0.806
5/14/19	10:23	39	25	13	max	15.00	-0.05	-0.03	0.622	0.547	0.613	0.595
5/14/19	10:23	39	26	13	max	20.00	-0.06	-0.06	0.502	0.581	0.512	0.533
5/14/19	10:23	39	27	13	max	30.00	-0.09	-0.07	0.427	0.464	0.450	0.447
5/14/19	10:23	39	28	13	max	40.00	-0.06	-0.19	0.381	0.416	0.405	0.401
5/14/19	12:08	41	2	13	none	5.01	0.00	0.00	1.180	0.946	0.884	1.010
5/14/19	12:08	41	3	13	none	7.53	-0.02	0.03	0.707	0.730	0.713	0.717
5/14/19	12:08	41	4	13	none	9.99	-0.06	0.08	0.539	0.602	0.545	0.563
5/14/19	12:08	41	5	13	none	15.00	-0.04	0.07	0.454	0.494	0.528	0.493
5/14/19	12:08	41	7	13	none	20.00	-0.04	0.02	0.438	0.564	0.474	0.495
5/14/19	12:08	41	8	13	none	30.10	-0.10	-0.01	0.398	0.461	0.427	0.429
5/14/19	12:08	41	9	13	none	40.00	-0.04	-0.17	0.362	0.389	0.391	0.381
5/14/19	12:08	41	10	13	none	50.00	-0.01	-0.03	0.332	0.390	0.342	0.355
5/14/19	12:08	41	11	13	max	5.06	0.02	0.04	1.960	1.350	1.060	1.500
5/14/19	12:08	41	12	13	max	7.46	0.01	0.03	1.110	0.786	0.792	0.907
5/14/19	12:08	41	13	13	max	10.00	-0.01	0.06	0.690	0.623	0.599	0.638
5/14/19	12:08	41	14	13	max	15.00	-0.01	0.01	0.523	0.570	0.563	0.552

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/14/19	12:08	41	15	13	max	20.00	-0.04	-0.01	0.504	0.577	0.521	0.535
5/14/19	12:08	41	16	13	max	30.00	-0.06	-0.04	0.440	0.494	0.466	0.467
5/14/19	12:08	41	17	13	max	40.00	-0.01	-0.15	0.390	0.437	0.420	0.416
5/14/19	12:08	41	18	13	max	50.00	0.01	-0.03	0.354	0.432	0.370	0.387
5/14/19	12:08	41	19	13	75%	4.96	0.01	0.03	1.590	0.956	0.884	1.190
5/14/19	12:08	41	20	13	75%	7.51	-0.02	0.05	0.780	0.697	0.657	0.713
5/14/19	12:08	41	21	13	75%	10.00	-0.04	0.06	0.595	0.649	0.596	0.614
5/14/19	12:08	41	22	13	75%	15.00	-0.05	0.04	0.483	0.548	0.529	0.521
5/14/19	12:08	41	23	13	50%	4.96	-0.01	0.03	1.110	0.785	0.726	0.889
5/14/19	12:08	41	24	13	50%	7.51	-0.03	0.05	0.780	0.738	0.713	0.744
5/14/19	12:08	41	25	13	50%	10.00	-0.06	0.06	0.554	0.631	0.568	0.585
5/14/19	12:08	41	26	13	50%	15.00	-0.05	0.05	0.461	0.537	0.505	0.502
5/14/19	14:34	42	2	13	none	5.01	0.00	0.01	1.130	0.939	0.864	0.984
5/14/19	14:34	42	3	13	none	7.49	-0.02	0.03	0.699	0.726	0.691	0.706
5/14/19	14:34	42	4	13	none	10.00	-0.05	0.07	0.542	0.598	0.565	0.569
5/14/19	14:34	42	5	13	none	15.00	-0.03	0.05	0.504	0.543	0.601	0.551
5/14/19	14:34	42	6	13	none	20.00	-0.02	-0.02	0.441	0.559	0.465	0.491
5/14/19	14:34	42	7	13	none	30.00	-0.09	-0.01	0.401	0.447	0.437	0.429
5/14/19	14:34	42	8	13	none	40.00	-0.05	-0.16	0.362	0.391	0.391	0.382
5/14/19	14:34	42	9	13	none	50.00	0.00	-0.03	0.332	0.397	0.342	0.358
5/14/19	14:34	42	10	13	max	4.97	0.00	0.02	1.930	1.680	1.540	1.730
5/14/19	14:34	42	11	13	max	7.48	-0.01	0.04	0.999	0.907	0.856	0.922
5/14/19	14:34	42	13	13	max	10.00	-0.02	0.06	0.715	0.665	0.638	0.674
5/14/19	14:34	42	14	13	max	15.00	-0.04	0.03	0.543	0.539	0.546	0.543
5/14/19	14:34	42	15	13	max	20.00	-0.05	0.02	0.478	0.544	0.497	0.507
5/14/19	14:34	42	16	13	max	30.00	-0.08	-0.01	0.434	0.493	0.461	0.463
5/14/19	14:34	42	17	13	max	40.00	-0.03	-0.13	0.388	0.433	0.411	0.411
5/14/19	14:34	42	18	13	max	50.00	-0.01	-0.02	0.354	0.434	0.364	0.386
5/14/19	14:34	42	19	13	75%	4.99	-0.01	0.02	1.420	1.090	1.000	1.180

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/14/19	14:34	42	20	13	75%	7.49	-0.02	0.04	0.854	0.745	0.709	0.772
5/14/19	14:34	42	21	13	75%	10.00	-0.04	0.06	0.607	0.612	0.577	0.599
5/14/19	14:34	42	22	13	75%	15.00	-0.05	0.04	0.471	0.518	0.507	0.499
5/14/19	14:34	42	23	13	50%	4.98	-0.02	0.01	1.200	1.000	0.843	1.020
5/14/19	14:34	42	24	13	50%	7.49	-0.03	0.04	0.712	0.679	0.664	0.685
5/14/19	14:34	42	25	13	50%	10.00	-0.07	0.06	0.549	0.589	0.538	0.559
5/14/19	14:34	42	26	13	50%	15.00	-0.06	0.05	0.451	0.508	0.488	0.483
5/14/19	15:40	44	4	13	none	4.97	-0.01	0.00	1.190	0.923	0.884	1.010
5/14/19	15:40	44	5	13	none	7.47	-0.02	0.03	0.713	0.734	0.710	0.719
5/14/19	15:40	44	6	13	none	9.98	-0.06	0.08	0.537	0.605	0.551	0.565
5/14/19	15:40	44	7	13	none	15.00	-0.03	0.07	0.454	0.500	0.512	0.489
5/14/19	15:40	44	8	13	none	20.00	-0.04	0.00	0.441	0.551	0.460	0.486
5/14/19	15:40	44	9	13	none	30.00	-0.09	-0.01	0.398	0.449	0.442	0.430
5/14/19	15:40	44	10	13	none	40.00	-0.04	-0.14	0.365	0.397	0.391	0.385
5/14/19	15:40	44	11	13	none	50.00	-0.02	-0.03	0.331	0.391	0.343	0.356
5/14/19	15:40	44	12	13	max	4.97	-0.02	-0.01	2.470	1.260	1.270	1.760
5/14/19	15:40	44	13	13	max	7.48	-0.02	0.00	1.140	0.774	0.812	0.923
5/14/19	15:40	44	14	13	max	10.00	-0.04	0.04	0.888	0.640	0.648	0.735
5/14/19	15:40	44	15	13	max	14.90	-0.05	0.02	0.565	0.508	0.547	0.540
5/14/19	15:40	44	16	13	max	20.00	-0.08	-0.02	0.495	0.529	0.529	0.518
5/14/19	15:40	44	17	13	max	30.00	-0.09	-0.01	0.433	0.479	0.459	0.457
5/14/19	15:40	44	18	13	max	40.00	-0.04	-0.15	0.384	0.432	0.412	0.410
5/14/19	15:40	44	19	13	max	50.00	-0.01	-0.02	0.351	0.427	0.368	0.384
5/14/19	15:40	44	20	13	75%	5.03	-0.02	0.00	1.820	0.930	1.020	1.320
5/14/19	15:40	44	21	13	75%	7.47	-0.03	0.02	0.829	0.664	0.687	0.730
5/14/19	15:40	44	22	13	75%	9.97	-0.06	0.03	0.676	0.608	0.602	0.630
5/14/19	15:40	44	23	13	75%	15.00	-0.06	0.02	0.488	0.501	0.517	0.502
5/14/19	15:40	44	24	13	50%	4.98	-0.01	-0.01	1.270	0.915	0.874	1.040
5/14/19	15:40	44	25	13	50%	7.48	-0.03	0.01	0.718	0.663	0.680	0.687

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/14/19	15:40	44	26	13	50%	9.98	-0.08	0.05	0.534	0.584	0.547	0.555
5/14/19	15:40	44	27	13	50%	15.00	-0.07	0.04	0.460	0.500	0.501	0.488
5/15/19	8:00	45	2	13	none	4.86	0.00	0.01	1.120	0.884	0.821	0.948
5/15/19	8:00	45	3	13	none	7.41	-0.02	0.03	0.688	0.705	0.696	0.697
5/15/19	8:00	45	4	13	none	9.94	-0.05	0.08	0.528	0.592	0.566	0.563
5/15/19	8:00	45	5	13	none	14.90	-0.04	0.08	0.461	0.501	0.517	0.493
5/15/19	8:00	45	6	13	none	20.00	-0.03	0.01	0.441	0.546	0.452	0.482
5/15/19	8:00	45	7	13	none	30.00	-0.09	0.01	0.399	0.440	0.441	0.427
5/15/19	8:00	45	8	13	none	40.00	-0.05	-0.14	0.360	0.392	0.392	0.382
5/15/19	8:00	45	9	13	none	50.00	-0.02	-0.03	0.329	0.387	0.342	0.354
5/15/19	8:00	45	10	13	max	4.90	-0.01	-0.03	2.550	1.020	1.220	1.740
5/15/19	8:00	45	11	13	max	7.48	-0.03	-0.04	1.340	0.672	0.791	0.980
5/15/19	8:00	45	12	13	max	10.00	-0.04	-0.02	0.859	0.582	0.686	0.718
5/15/19	8:00	45	13	13	max	15.00	-0.04	-0.01	0.623	0.552	0.590	0.589
5/15/19	8:00	45	14	13	max	20.00	-0.04	-0.04	0.502	0.590	0.517	0.538
5/15/19	8:00	45	15	13	max	30.00	-0.08	-0.04	0.424	0.467	0.447	0.446
5/15/19	8:00	45	16	13	max	40.00	-0.04	-0.16	0.384	0.421	0.406	0.404
5/15/19	8:00	45	17	13	max	50.00	-0.01	-0.03	0.348	0.423	0.357	0.378
5/15/19	8:00	45	18	13	75%	4.90	-0.02	-0.02	2.110	0.876	0.980	1.440
5/15/19	8:00	45	19	13	75%	7.46	-0.02	0.00	1.050	0.660	0.778	0.845
5/15/19	8:00	45	20	13	75%	10.00	-0.04	0.02	0.685	0.583	0.675	0.649
5/15/19	8:00	45	21	13	75%	15.00	-0.04	0.01	0.528	0.545	0.578	0.551
5/15/19	8:00	45	22	13	50%	4.88	-0.01	-0.01	1.320	0.841	0.891	1.040
5/15/19	8:00	45	23	13	50%	7.43	-0.02	0.01	0.765	0.670	0.749	0.729
5/15/19	8:00	45	24	13	50%	9.99	-0.05	0.04	0.605	0.578	0.637	0.607
5/15/19	8:00	45	25	13	50%	15.00	-0.03	0.03	0.492	0.534	0.547	0.525
5/15/19	10:33	46	2	13	none	4.89	0.00	0.02	1.230	0.925	0.896	1.030

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	10:33	46	3	13	none	7.42	-0.02	0.04	0.700	0.699	0.720	0.707
5/15/19	10:33	46	4	13	none	9.98	-0.06	0.09	0.525	0.600	0.553	0.560
5/15/19	10:33	46	5	13	none	14.90	-0.04	0.08	0.460	0.509	0.512	0.494
5/15/19	10:33	46	6	13	none	19.90	-0.04	0.02	0.442	0.542	0.460	0.483
5/15/19	10:33	46	7	13	none	29.90	-0.09	0.01	0.397	0.434	0.436	0.423
5/15/19	10:33	46	8	13	none	40.00	-0.05	-0.15	0.358	0.379	0.389	0.375
5/15/19	10:33	46	9	13	none	50.00	-0.01	-0.02	0.328	0.384	0.340	0.352
5/15/19	10:33	46	11	13	max	4.88	0.00	0.00	2.390	1.130	1.120	1.660
5/15/19	10:33	46	12	13	max	4.86	0.00	0.00	2.240	1.160	1.130	1.600
5/15/19	10:33	46	13	13	max	7.44	-0.01	0.00	1.160	0.670	0.732	0.880
5/15/19	10:33	46	14	13	max	9.96	-0.01	0.01	0.740	0.543	0.591	0.630
5/15/19	10:33	46	15	13	max	14.90	-0.05	-0.03	0.560	0.580	0.565	0.568
5/15/19	10:33	46	16	13	max	19.90	-0.07	-0.07	0.492	0.601	0.507	0.535
5/15/19	10:33	46	17	13	max	30.00	-0.08	-0.08	0.410	0.448	0.435	0.431
5/15/19	10:33	46	18	13	max	40.00	-0.06	-0.18	0.367	0.401	0.391	0.387
5/15/19	10:33	46	19	13	max	50.00	-0.05	-0.03	0.339	0.403	0.353	0.366
5/15/19	10:33	46	20	13	75%	4.90	0.00	0.00	1.730	0.915	0.915	1.240
5/15/19	10:33	46	21	13	75%	4.88	-0.01	0.00	1.520	0.878	0.854	1.130
5/15/19	10:33	46	22	13	75%	7.42	-0.01	0.02	0.833	0.639	0.690	0.725
5/15/19	10:33	46	23	13	75%	9.94	-0.01	0.03	0.601	0.542	0.587	0.577
5/15/19	10:33	46	24	13	75%	15.00	-0.04	-0.02	0.520	0.586	0.553	0.554
5/15/19	10:33	46	25	13	50%	4.89	-0.01	0.00	1.360	0.864	0.852	1.050
5/15/19	10:33	46	26	13	50%	4.85	-0.01	0.01	1.260	0.848	0.841	1.000
5/15/19	10:33	46	27	13	50%	7.44	0.00	0.02	0.746	0.644	0.680	0.691
5/15/19	10:33	46	28	13	50%	9.97	-0.01	0.04	0.552	0.548	0.596	0.565
5/15/19	10:33	46	29	13	50%	15.00	-0.02	0.01	0.515	0.588	0.543	0.549
5/15/19	11:34	47	2	13	none	5.02	-0.01	0.02	1.060	0.831	0.819	0.909
5/15/19	11:34	47	3	13	none	5.03	-0.01	0.02	1.050	0.841	0.825	0.912

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	11:34	47	4	13	none	7.51	-0.02	0.03	0.682	0.682	0.717	0.694
5/15/19	11:34	47	6	13	none	10.00	-0.04	0.10	0.538	0.598	0.544	0.561
5/15/19	11:34	47	7	13	none	15.00	-0.01	0.09	0.471	0.516	0.535	0.508
5/15/19	11:34	47	8	13	none	20.00	-0.02	0.01	0.438	0.546	0.462	0.484
5/15/19	11:34	47	9	13	none	30.00	-0.06	0.02	0.398	0.446	0.437	0.428
5/15/19	11:34	47	10	13	none	40.00	-0.03	-0.13	0.358	0.384	0.387	0.376
5/15/19	11:34	47	11	13	none	50.00	-0.01	-0.02	0.327	0.399	0.340	0.357
5/15/19	11:34	47	12	13	max	4.96	0.00	0.02	1.660	1.340	1.140	1.400
5/15/19	11:34	47	14	13	max	4.99	0.00	0.02	1.710	1.250	1.090	1.370
5/15/19	11:34	47	15	13	max	7.52	0.00	0.03	0.979	0.727	0.703	0.813
5/15/19	11:34	47	16	13	max	10.00	-0.01	0.05	0.648	0.614	0.609	0.624
5/15/19	11:34	47	17	13	max	15.00	-0.03	-0.01	0.507	0.597	0.535	0.547
5/15/19	11:34	47	18	13	max	20.00	-0.05	-0.06	0.485	0.617	0.494	0.535
5/15/19	11:34	47	19	13	max	30.00	-0.07	-0.08	0.396	0.438	0.430	0.422
5/15/19	11:34	47	20	13	max	40.00	-0.03	-0.16	0.369	0.393	0.393	0.385
5/15/19	11:34	47	21	13	max	50.00	-0.03	-0.02	0.329	0.391	0.345	0.356
5/15/19	11:34	47	22	13	75%	5.01	0.00	0.01	1.470	1.080	1.000	1.200
5/15/19	11:34	47	23	13	75%	5.03	0.00	0.01	1.350	0.995	0.949	1.110
5/15/19	11:34	47	24	13	75%	7.51	0.00	0.04	0.792	0.720	0.703	0.740
5/15/19	11:34	47	25	13	75%	10.00	0.00	0.05	0.596	0.582	0.579	0.585
5/15/19	11:34	47	26	13	75%	15.00	-0.02	0.00	0.513	0.596	0.527	0.547
5/15/19	11:34	47	27	13	50%	4.99	0.00	0.01	1.280	0.970	0.876	1.050
5/15/19	11:34	47	28	13	50%	5.00	0.00	0.01	1.280	0.982	0.914	1.070
5/15/19	11:34	47	29	13	50%	7.49	-0.01	0.03	0.724	0.693	0.714	0.711
5/15/19	11:34	47	30	13	50%	10.00	0.00	0.05	0.546	0.561	0.570	0.559
5/15/19	11:34	47	31	13	50%	15.00	-0.01	0.01	0.511	0.581	0.553	0.549
5/15/19	13:12	48	2	13	none	5.02	-0.01	0.00	1.080	0.931	0.846	0.957
5/15/19	13:12	48	3	13	none	5.02	-0.01	0.00	1.170	0.994	0.888	1.020

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	13:12	48	4	13	none	7.50	-0.02	0.03	0.719	0.697	0.752	0.723
5/15/19	13:12	48	5	13	none	10.00	-0.05	0.08	0.525	0.585	0.563	0.558
5/15/19	13:12	48	6	13	none	15.00	-0.03	0.08	0.448	0.489	0.513	0.484
5/15/19	13:12	48	7	13	none	20.00	-0.03	0.02	0.438	0.542	0.461	0.483
5/15/19	13:12	48	8	13	none	30.00	-0.07	0.00	0.395	0.441	0.433	0.423
5/15/19	13:12	48	9	13	none	40.00	-0.02	-0.13	0.361	0.383	0.388	0.377
5/15/19	13:12	48	10	13	none	50.00	0.01	-0.03	0.331	0.385	0.337	0.352
5/15/19	13:12	48	11	13	max	5.01	-0.01	0.01	1.720	0.915	1.040	1.270
5/15/19	13:12	48	12	13	max	4.98	-0.01	0.01	1.510	0.907	0.944	1.150
5/15/19	13:12	48	13	13	max	7.51	-0.01	0.03	0.778	0.674	0.640	0.700
5/15/19	13:12	48	14	13	max	10.00	-0.02	0.07	0.642	0.622	0.598	0.621
5/15/19	13:12	48	15	13	max	15.00	-0.03	0.01	0.514	0.600	0.564	0.561
5/15/19	13:12	48	16	13	max	20.10	-0.04	-0.05	0.472	0.614	0.508	0.535
5/15/19	13:12	48	17	13	max	30.00	-0.07	-0.07	0.401	0.441	0.449	0.431
5/15/19	13:12	48	18	13	max	40.00	-0.03	-0.16	0.362	0.397	0.395	0.385
5/15/19	13:12	48	19	13	max	50.00	-0.03	-0.02	0.341	0.404	0.356	0.368
5/15/19	13:12	48	20	13	75%	5.01	0.00	0.01	1.320	0.873	0.911	1.050
5/15/19	13:12	48	21	13	75%	5.01	0.00	0.01	1.260	0.857	0.881	1.020
5/15/19	13:12	48	22	13	75%	7.50	0.00	0.04	0.751	0.709	0.706	0.722
5/15/19	13:12	48	23	13	75%	10.00	-0.01	0.06	0.595	0.619	0.599	0.605
5/15/19	13:12	48	24	13	75%	15.00	-0.02	0.01	0.504	0.593	0.537	0.546
5/15/19	13:12	48	25	13	75%	20.00	-0.03	-0.04	0.460	0.608	0.494	0.524
5/15/19	13:12	48	26	13	50%	5.02	0.01	0.00	1.190	0.982	0.954	1.050
5/15/19	13:12	48	27	13	50%	5.01	0.01	0.00	1.220	1.010	0.922	1.060
5/15/19	13:12	48	28	13	50%	7.52	0.01	0.04	0.719	0.721	0.710	0.717
5/15/19	13:12	48	29	13	50%	10.00	0.00	0.07	0.546	0.582	0.570	0.566
5/15/19	13:12	48	30	13	50%	15.00	-0.01	0.01	0.497	0.582	0.536	0.540
5/15/19	13:12	48	31	13	50%	20.00	-0.02	-0.03	0.460	0.597	0.498	0.521

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	14:51	49	2	13	none	10.30	-0.06	0.09	0.528	0.608	0.542	0.560
5/15/19	14:51	49	3	1	none	9.99	0.10	0.17	0.659	0.751	0.476	0.639
5/15/19	14:51	49	4	2	none	10.02	-0.14	-0.12	0.502	0.562	0.503	0.523
5/15/19	14:51	49	5	3	none	10.10	0.18	0.11	0.495	0.569	0.463	0.511
5/15/19	14:51	49	6	4	none	10.10	0.13	0.02	0.666	0.698	0.629	0.665
5/15/19	14:51	49	7	5	none	10.30	-0.09	0.06	0.508	0.599	0.580	0.564
5/15/19	14:51	49	8	6	none	10.10	-0.06	0.16	0.456	0.511	0.401	0.458
5/15/19	14:51	49	9	7	none	10.02	-0.08	0.04	0.379	0.356	0.408	0.382
5/15/19	14:51	49	10	8	none	10.02	0.15	0.10	0.455	0.413	0.463	0.444
5/15/19	14:51	49	11	9	none	10.30	0.06	0.04	0.522	0.564	0.405	0.502
5/15/19	14:51	49	12	10	none	10.30	0.03	0.10	0.499	0.712	0.485	0.575
5/15/19	14:51	49	13	11	none	10.02	-0.06	0.10	0.614	0.779	0.579	0.663
5/15/19	14:51	49	14	12	none	10.30	-0.05	-0.02	0.597	0.567	0.767	0.650
5/15/19	14:51	49	15	13	none	10.30	-0.04	0.09	0.512	0.588	0.542	0.548
5/15/19	14:51	49	16	14	none	10.30	0.02	0.02	0.545	0.572	0.592	0.570
5/15/19	14:51	49	17	15	none	10.50	0.00	0.05	0.608	0.712	0.567	0.632
5/15/19	14:51	49	18	16	none	10.10	0.04	0.18	0.517	0.594	0.486	0.534
5/15/19	14:51	49	19	17	none	10.02	-0.47	0.10	0.586	0.547	0.503	0.546
5/15/19	14:51	49	20	18	none	10.30	0.08	0.07	0.406	0.358	0.432	0.400
5/15/19	14:51	49	21	19	none	10.30	0.11	0.10	0.403	0.522	0.406	0.447
5/15/19	14:51	49	22	20	none	10.40	-0.02	0.09	0.501	0.625	0.606	0.580
5/15/19	14:51	49	23	21	none	10.00	0.09	0.02	0.528	0.572	0.602	0.568
5/15/19	14:51	49	24	22	none	10.10	-0.05	-0.03	0.966	0.625	0.633	0.758
5/15/19	14:51	49	25	23	none	10.02	0.03	-0.01	0.549	1.020	0.647	0.765
5/15/19	14:51	49	26	24	none	10.10	-0.16	0.55	0.772	1.110	0.669	0.871
5/15/19	14:51	49	27	25	none	10.40	-0.06	-0.16	0.659	0.732	0.860	0.755
5/15/19	14:51	49	28	13	none	10.30	-0.02	0.10	0.524	0.574	0.559	0.553
5/15/19	15:22	50	2	13	max	10.30	-0.04	0.04	0.740	0.615	0.640	0.667

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	15:22	50	3	1	max	10.00	0.06	0.15	1.010	0.978	0.605	0.884
5/15/19	15:22	50	4	2	max	10.02	-0.02	-0.12	0.914	0.610	0.621	0.729
5/15/19	15:22	50	5	3	max	10.02	0.02	0.13	0.763	0.802	0.545	0.712
5/15/19	15:22	50	6	4	max	10.02	0.10	0.03	0.753	0.599	0.637	0.666
5/15/19	15:22	50	7	5	max	10.30	-0.02	0.14	0.731	0.661	0.572	0.658
5/15/19	15:22	50	8	6	max	10.10	-0.04	0.14	0.840	0.643	0.554	0.690
5/15/19	15:22	50	9	7	max	10.02	-0.03	0.02	0.670	0.565	0.483	0.578
5/15/19	15:22	50	10	8	max	10.02	0.07	0.09	0.780	0.578	0.667	0.680
5/15/19	15:22	50	11	9	max	10.30	0.07	0.01	0.657	0.713	0.593	0.656
5/15/19	15:22	50	12	10	max	10.30	0.02	0.02	0.676	0.951	0.563	0.748
5/15/19	15:22	50	13	11	max	10.02	-0.05	0.06	0.896	0.805	0.600	0.777
5/15/19	15:22	50	14	12	max	10.30	-0.05	-0.03	0.758	0.629	0.707	0.700
5/15/19	15:22	50	15	13	max	10.30	-0.04	0.05	0.777	0.623	0.643	0.684
5/15/19	15:22	50	16	14	max	10.30	-0.01	0.11	0.784	0.627	0.619	0.681
5/15/19	15:22	50	17	15	max	10.40	0.08	0.15	0.776	0.963	0.574	0.787
5/15/19	15:22	50	18	16	max	10.02	-0.01	0.13	1.000	1.070	0.632	0.923
5/15/19	15:22	50	19	17	max	10.02	-0.33	0.08	1.090	1.110	0.937	1.050
5/15/19	15:22	50	20	18	max	10.30	0.03	0.05	0.803	0.558	0.657	0.680
5/15/19	15:22	50	21	19	max	10.30	0.07	0.11	0.785	0.648	0.487	0.651
5/15/19	15:22	50	22	20	max	10.30	-0.02	0.10	0.961	0.922	0.740	0.879
5/15/19	15:22	50	23	21	max	10.10	0.04	0.02	1.120	0.714	0.615	0.845
5/15/19	15:22	50	24	22	max	10.10	-0.04	-0.19	1.340	0.733	0.820	1.000
5/15/19	15:22	50	25	23	max	10.02	-0.05	0.13	0.922	0.924	0.819	0.890
5/15/19	15:22	50	26	24	max	10.02	-0.11	0.48	1.130	1.170	0.828	1.050
5/15/19	15:22	50	27	25	max	10.40	-0.11	-0.07	1.070	1.140	1.120	1.110
5/15/19	15:22	50	28	13	max	10.30	-0.03	0.05	0.759	0.616	0.638	0.674
5/15/19	15:53	51	2	13	max	10.30	-0.04	0.02	0.873	0.568	0.726	0.733
5/15/19	15:53	51	3	1	max	10.00	0.13	0.16	1.220	1.280	0.797	1.120

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	15:53	51	4	2	max	10.10	-0.07	-0.11	1.010	0.850	0.733	0.872
5/15/19	15:53	51	5	3	max	10.10	0.03	0.14	0.959	1.280	0.771	1.030
5/15/19	15:53	51	6	4	max	10.10	0.15	0.03	0.859	0.969	0.733	0.859
5/15/19	15:53	51	7	5	max	10.02	-0.09	0.17	0.844	0.771	0.769	0.795
5/15/19	15:53	51	8	6	max	10.10	0.02	0.13	0.833	0.670	0.743	0.752
5/15/19	15:53	51	9	7	max	10.02	-0.07	0.01	0.902	0.665	0.553	0.721
5/15/19	15:53	51	10	8	max	10.02	0.07	0.06	0.976	0.758	0.831	0.860
5/15/19	15:53	51	11	9	max	10.02	0.14	0.02	0.801	1.100	0.743	0.895
5/15/19	15:53	51	12	10	max	10.02	0.30	0.00	0.769	1.110	0.806	0.909
5/15/19	15:53	51	13	11	max	10.02	-0.02	0.05	0.839	0.805	0.662	0.773
5/15/19	15:53	51	14	12	max	10.30	-0.06	-0.10	0.858	0.625	0.908	0.807
5/15/19	15:53	51	15	13	max	10.30	-0.04	0.01	0.905	0.576	0.709	0.742
5/15/19	15:53	51	16	14	max	10.02	0.00	0.16	0.849	0.624	0.753	0.748
5/15/19	15:53	51	17	15	max	10.30	0.05	0.13	0.859	0.964	0.591	0.820
5/15/19	15:53	51	18	16	max	10.10	0.00	0.13	0.897	0.939	0.630	0.833
5/15/19	15:53	51	19	17	max	10.10	-0.34	0.10	0.993	1.190	0.930	1.040
5/15/19	15:53	51	20	18	max	10.30	0.06	0.04	0.739	0.584	0.735	0.690
5/15/19	15:53	51	21	19	max	10.02	0.09	0.10	0.803	0.684	0.515	0.678
5/15/19	15:53	51	22	20	max	10.30	-0.02	0.08	0.876	0.917	0.765	0.855
5/15/19	15:53	51	23	21	max	9.98	0.05	0.02	0.840	0.706	0.655	0.738
5/15/19	15:53	51	24	22	max	10.00	-0.05	-0.19	1.340	0.734	0.880	1.020
5/15/19	15:53	51	25	23	max	10.10	-0.01	0.12	0.828	1.020	0.892	0.915
5/15/19	15:53	51	26	24	max	10.10	-0.09	0.47	0.970	1.180	0.964	1.040
5/15/19	15:53	51	27	25	max	10.30	-0.04	-0.15	0.893	1.030	0.936	0.954
5/15/19	15:53	51	28	13	max	10.30	-0.03	0.02	0.982	0.574	0.708	0.773
5/15/19	16:22	52	2	13	none	10.30	-0.05	0.09	0.506	0.580	0.539	0.542
5/15/19	16:22	52	3	1	none	9.95	0.12	0.15	0.692	0.794	0.538	0.682
5/15/19	16:22	52	4	2	none	10.10	-0.14	-0.12	0.521	0.648	0.544	0.574

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/15/19	16:22	52	5	3	none	10.10	0.02	0.11	0.519	0.676	0.496	0.569
5/15/19	16:22	52	6	4	none	10.10	0.03	0.30	1.030	1.310	0.809	1.070
5/15/19	16:22	52	7	5	none	10.02	-0.14	0.07	0.510	0.597	0.621	0.578
5/15/19	16:22	52	8	6	none	10.10	-0.03	0.14	0.576	0.493	0.397	0.494
5/15/19	16:22	52	9	7	none	10.02	-0.08	0.03	0.380	0.395	0.410	0.395
5/15/19	16:22	52	10	8	none	10.10	0.15	0.10	0.459	0.400	0.484	0.449
5/15/19	16:22	52	11	9	none	10.30	0.08	0.02	0.546	0.562	0.429	0.516
5/15/19	16:22	52	12	10	none	10.02	0.03	0.10	0.462	0.723	0.492	0.571
5/15/19	16:22	52	13	11	none	10.02	-0.02	0.09	0.625	0.777	0.597	0.671
5/15/19	16:22	52	14	12	none	10.02	-0.05	-0.03	0.620	0.557	0.801	0.668
5/15/19	16:22	52	15	13	none	10.30	-0.04	0.09	0.507	0.581	0.551	0.547
5/15/19	16:22	52	16	14	none	10.30	0.00	0.02	0.548	0.567	0.571	0.562
5/15/19	16:22	52	17	15	none	10.40	0.00	0.06	0.607	0.739	0.555	0.638
5/15/19	16:22	52	18	16	none	10.10	0.02	0.17	0.513	0.561	0.463	0.514
5/15/19	16:22	52	19	17	none	10.10	-0.45	0.08	0.752	0.532	0.494	0.604
5/15/19	16:22	52	20	18	none	10.30	0.11	0.07	0.426	0.389	0.413	0.410
5/15/19	16:22	52	21	19	none	10.30	0.12	0.09	0.400	0.507	0.378	0.432
5/15/19	16:22	52	22	20	none	10.30	-0.19	0.12	0.535	0.649	0.650	0.614
5/15/19	16:22	52	23	21	none	9.99	0.09	0.02	0.529	0.543	0.567	0.547
5/15/19	16:22	52	24	22	none	10.00	-0.07	-0.03	0.990	0.622	0.636	0.768
5/15/19	16:22	52	25	23	none	10.02	0.01	0.01	0.532	0.812	0.719	0.697
5/15/19	16:22	52	26	24	none	10.10	-0.19	0.56	0.946	1.240	0.778	1.010
5/15/19	16:22	52	27	25	none	10.40	0.01	-0.19	0.669	0.622	0.858	0.723
5/15/19	16:22	52	28	13	none	10.30	-0.04	0.08	0.512	0.581	0.558	0.551
5/16/19	8:54	53	2	13	none	10.30	-0.09	0.10	0.499	0.569	0.488	0.520
5/16/19	8:54	53	3	1	none	9.99	0.11	0.17	0.718	0.885	0.581	0.739
5/16/19	8:54	53	4	2	none	10.02	-0.11	-0.10	0.535	0.778	0.567	0.636
5/16/19	8:54	53	5	3	none	10.10	0.17	0.12	0.493	0.636	0.501	0.547

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	8:54	53	6	4	none	10.10	0.16	0.02	0.755	0.936	0.830	0.843
5/16/19	8:54	53	7	5	none	10.30	-0.11	0.08	0.537	0.645	0.630	0.606
5/16/19	8:54	53	8	6	none	10.10	-0.05	0.17	0.482	0.543	0.436	0.489
5/16/19	8:54	53	9	7	none	10.02	-0.10	0.04	0.378	0.392	0.419	0.397
5/16/19	8:54	53	10	8	none	10.02	0.13	0.10	0.464	0.426	0.453	0.448
5/16/19	8:54	53	11	9	none	10.30	0.10	0.03	0.584	0.707	0.479	0.597
5/16/19	8:54	53	12	10	none	10.02	0.45	0.03	0.500	0.723	0.645	0.629
5/16/19	8:54	53	13	11	none	10.02	-0.04	0.10	0.610	0.738	0.609	0.655
5/16/19	8:54	53	14	12	none	10.02	-0.09	0.00	0.545	0.584	0.645	0.592
5/16/19	8:54	53	15	13	none	10.30	-0.07	0.10	0.485	0.579	0.504	0.524
5/16/19	8:54	53	16	14	none	10.30	-0.03	0.02	0.525	0.558	0.539	0.541
5/16/19	8:54	53	17	15	none	10.50	0.03	0.08	0.651	0.747	0.520	0.646
5/16/19	8:54	53	18	16	none	10.10	0.01	0.17	0.561	0.731	0.558	0.622
5/16/19	8:54	53	19	17	none	10.02	-0.42	0.09	0.651	0.612	0.576	0.614
5/16/19	8:54	53	20	18	none	10.30	0.07	0.10	0.417	0.379	0.441	0.413
5/16/19	8:54	53	21	19	none	10.30	0.06	0.12	0.418	0.400	0.436	0.418
5/16/19	8:54	53	22	20	none	10.40	-0.02	0.12	0.561	0.650	0.664	0.627
5/16/19	8:54	53	23	21	none	10.00	0.06	0.02	0.539	0.579	0.562	0.561
5/16/19	8:54	53	24	22	none	10.10	-0.05	-0.03	1.030	0.649	0.592	0.782
5/16/19	8:54	53	25	23	none	10.02	-0.06	0.06	0.528	0.679	0.668	0.629
5/16/19	8:54	53	26	24	none	10.10	-0.19	0.48	0.654	0.983	0.552	0.753
5/16/19	8:54	53	27	25	none	10.40	-0.04	-0.18	0.651	0.640	0.809	0.704
5/16/19	8:54	53	28	13	none	10.30	-0.08	0.11	0.475	0.542	0.463	0.494
5/16/19	9:33	54	2	13	max	10.02	-0.03	0.08	0.685	0.609	0.579	0.626
5/16/19	9:33	54	3	1	max	10.00	0.07	0.13	0.947	1.070	0.745	0.931
5/16/19	9:33	54	4	2	max	10.02	-0.01	-0.13	0.719	0.565	0.743	0.680
5/16/19	9:33	54	5	3	max	10.02	0.03	0.09	0.846	0.872	0.623	0.788
5/16/19	9:33	54	6	4	max	10.02	0.13	0.03	0.695	0.859	0.648	0.740

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	9:33	54	7	5	max	10.30	0.03	0.11	0.723	0.705	0.562	0.667
5/16/19	9:33	54	8	6	max	10.00	-0.04	0.14	0.654	0.680	0.585	0.641
5/16/19	9:33	54	9	7	max	10.10	0.01	0.05	0.580	0.622	0.527	0.578
5/16/19	9:33	54	10	8	max	10.10	0.13	0.07	0.620	0.556	0.632	0.603
5/16/19	9:33	54	11	9	max	10.02	0.09	0.05	0.615	0.901	0.577	0.713
5/16/19	9:33	54	12	10	max	10.30	0.02	0.06	0.596	0.780	0.593	0.662
5/16/19	9:33	54	13	11	max	10.00	-0.03	0.09	0.796	0.723	0.631	0.720
5/16/19	9:33	54	14	12	max	10.10	-0.04	0.04	0.728	0.626	0.626	0.661
5/16/19	9:33	54	15	13	max	10.02	-0.02	0.07	0.632	0.644	0.586	0.621
5/16/19	9:33	54	16	14	max	10.02	0.02	0.14	0.681	0.561	0.620	0.622
5/16/19	9:33	54	17	15	max	10.30	0.04	0.16	0.734	0.857	0.633	0.747
5/16/19	9:33	54	18	16	max	10.10	0.01	0.16	0.894	0.756	0.603	0.760
5/16/19	9:33	54	19	17	max	10.10	-0.02	0.14	1.080	1.370	1.000	1.160
5/16/19	9:33	54	20	18	max	10.02	0.00	0.03	0.903	0.724	0.832	0.823
5/16/19	9:33	54	21	19	max	10.02	0.04	0.11	0.793	0.791	0.632	0.742
5/16/19	9:33	54	22	20	max	10.02	-0.16	0.15	0.951	1.140	0.817	0.980
5/16/19	9:33	54	23	21	max	9.94	0.03	0.15	1.100	1.180	0.825	1.050
5/16/19	9:33	54	24	22	max	9.95	-0.12	-0.12	2.080	1.480	1.610	1.740
5/16/19	9:33	54	25	23	max	9.78	-0.02	0.16	3.430	3.360	3.130	3.310
5/16/19	9:33	54	26	24	max	9.84	-0.17	0.16	2.770	3.190	2.790	2.920
5/16/19	9:33	54	27	25	max	10.00	-0.03	0.08	1.840	1.320	1.370	1.530
5/16/19	9:33	54	28	13	max	10.02	-0.01	0.08	0.678	0.620	0.614	0.638
5/16/19	10:18	55	2	13	none	10.30	-0.03	0.09	0.504	0.554	0.537	0.532
5/16/19	10:18	55	3	1	none	10.00	0.10	0.17	0.628	0.765	0.496	0.639
5/16/19	10:18	55	4	2	none	10.02	-0.10	-0.12	0.516	0.617	0.514	0.551
5/16/19	10:18	55	5	3	none	10.10	0.02	0.12	0.460	0.566	0.420	0.486
5/16/19	10:18	55	6	4	none	10.02	0.18	0.02	0.696	0.833	0.625	0.723
5/16/19	10:18	55	7	5	none	10.30	-0.12	0.06	0.529	0.602	0.608	0.581

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	10:18	55	8	6	none	10.10	-0.05	0.17	0.463	0.503	0.405	0.459
5/16/19	10:18	55	9	7	none	10.02	-0.08	0.03	0.370	0.358	0.407	0.379
5/16/19	10:18	55	10	8	none	10.02	0.15	0.10	0.476	0.417	0.449	0.448
5/16/19	10:18	55	11	9	none	10.30	0.11	0.02	0.589	0.588	0.431	0.541
5/16/19	10:18	55	12	10	none	10.30	0.03	0.12	0.502	0.724	0.470	0.576
5/16/19	10:18	55	13	11	none	10.02	-0.08	0.08	0.597	0.791	0.555	0.656
5/16/19	10:18	55	14	12	none	10.30	-0.03	0.00	0.584	0.587	0.716	0.632
5/16/19	10:18	55	15	13	none	10.30	-0.03	0.09	0.516	0.575	0.552	0.548
5/16/19	10:18	55	16	14	none	10.30	0.02	0.02	0.551	0.548	0.600	0.567
5/16/19	10:18	55	17	15	none	10.50	0.01	0.05	0.650	0.781	0.602	0.682
5/16/19	10:18	55	18	16	none	10.10	0.02	0.16	0.549	0.736	0.545	0.616
5/16/19	10:18	55	19	17	none	10.10	-0.46	0.08	0.913	0.663	0.599	0.737
5/16/19	10:18	55	20	18	none	10.30	0.09	0.05	0.447	0.412	0.479	0.447
5/16/19	10:18	55	21	19	none	10.30	0.09	0.09	0.403	0.433	0.396	0.411
5/16/19	10:18	55	22	20	none	10.30	-0.03	0.07	0.461	0.611	0.538	0.540
5/16/19	10:18	55	23	21	none	10.00	0.07	0.19	0.563	0.586	0.644	0.599
5/16/19	10:18	55	24	22	none	10.00	-0.04	-0.03	0.951	0.584	0.572	0.724
5/16/19	10:18	55	25	23	none	10.02	-0.03	0.04	0.588	0.802	0.947	0.793
5/16/19	10:18	55	26	24	none	10.10	-0.15	0.57	0.890	1.220	0.717	0.963
5/16/19	10:18	55	27	25	none	10.40	-0.02	-0.02	0.665	0.576	0.846	0.705
5/16/19	10:18	55	28	13	none	10.30	-0.02	0.09	0.512	0.565	0.550	0.543
5/16/19	10:53	56	2	13	max	10.30	-0.03	0.07	0.676	0.653	0.631	0.653
5/16/19	10:53	56	3	1	max	10.00	0.08	0.13	0.995	1.050	0.655	0.915
5/16/19	10:53	56	4	2	max	10.02	-0.01	-0.13	0.746	0.546	0.673	0.660
5/16/19	10:53	56	5	3	max	10.02	0.02	0.10	0.723	0.823	0.589	0.718
5/16/19	10:53	56	6	4	max	10.02	0.13	0.02	0.658	0.745	0.612	0.674
5/16/19	10:53	56	7	5	max	10.30	0.04	0.10	0.692	0.585	0.559	0.615
5/16/19	10:53	56	8	6	max	10.00	-0.06	0.14	0.638	0.621	0.501	0.590

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	10:53	56	9	7	max	10.02	-0.01	0.03	0.550	0.510	0.482	0.515
5/16/19	10:53	56	10	8	max	10.02	0.10	0.11	0.654	0.547	0.618	0.608
5/16/19	10:53	56	11	9	max	10.02	0.07	0.04	0.564	0.607	0.530	0.568
5/16/19	10:53	56	12	10	max	10.30	0.02	0.04	0.576	0.765	0.518	0.629
5/16/19	10:53	56	13	11	max	10.10	-0.04	0.06	0.766	0.816	0.609	0.736
5/16/19	10:53	56	14	12	max	10.02	-0.04	0.01	0.735	0.649	0.656	0.682
5/16/19	10:53	56	15	13	max	10.30	-0.02	0.07	0.702	0.642	0.614	0.654
5/16/19	10:53	56	16	14	max	10.30	0.03	0.11	0.710	0.602	0.630	0.649
5/16/19	10:53	56	17	15	max	10.30	0.00	0.12	0.776	0.825	0.578	0.734
5/16/19	10:53	56	18	16	max	10.02	0.01	0.14	0.746	0.819	0.487	0.699
5/16/19	10:53	56	19	17	max	10.02	-0.03	0.10	1.020	1.020	0.905	0.983
5/16/19	10:53	56	20	18	max	10.30	0.01	0.06	0.757	0.558	0.574	0.636
5/16/19	10:53	56	21	19	max	10.30	0.02	0.11	0.803	0.614	0.497	0.650
5/16/19	10:53	56	22	20	max	10.40	-0.02	0.09	0.969	0.895	0.689	0.859
5/16/19	10:53	56	23	21	max	10.02	0.03	0.02	1.160	0.934	0.666	0.943
5/16/19	10:53	56	24	22	max	10.30	-0.04	-0.16	1.280	0.820	0.882	1.010
5/16/19	10:53	56	25	23	max	10.30	-0.07	0.14	0.914	1.110	0.785	0.946
5/16/19	10:53	56	26	24	max	10.02	-0.19	0.34	1.220	1.490	1.380	1.370
5/16/19	10:53	56	27	25	max	10.50	-0.12	-0.09	1.190	1.080	1.120	1.130
5/16/19	10:53	56	28	13	max	10.30	-0.01	0.07	0.696	0.623	0.626	0.649
5/16/19	11:30	57	2	13	none	10.30	-0.06	0.09	0.493	0.574	0.511	0.527
5/16/19	11:30	57	3	1	none	10.00	0.11	0.15	0.718	0.906	0.548	0.738
5/16/19	11:30	57	4	2	none	10.02	-0.10	-0.11	0.521	0.750	0.575	0.623
5/16/19	11:30	57	5	3	none	10.10	0.34	0.12	0.664	1.070	0.741	0.842
5/16/19	11:30	57	6	4	none	10.10	0.02	0.02	0.742	1.030	0.708	0.840
5/16/19	11:30	57	7	5	none	10.30	-0.11	0.06	0.502	0.616	0.646	0.591
5/16/19	11:30	57	8	6	none	10.10	-0.01	0.13	0.513	0.544	0.445	0.503
5/16/19	11:30	57	9	7	none	10.02	-0.08	0.03	0.372	0.377	0.415	0.388

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	11:30	57	10	8	none	10.02	0.08	0.07	0.480	0.508	0.483	0.491
5/16/19	11:30	57	11	9	none	10.30	0.08	0.06	0.600	0.680	0.525	0.605
5/16/19	11:30	57	12	10	none	10.02	0.41	0.01	0.493	0.791	0.682	0.667
5/16/19	11:30	57	13	11	none	10.02	-0.03	0.07	0.604	0.713	0.612	0.645
5/16/19	11:30	57	14	12	none	10.02	-0.06	0.00	0.588	0.583	0.725	0.635
5/16/19	11:30	57	15	13	none	10.30	-0.07	0.10	0.484	0.566	0.495	0.516
5/16/19	11:30	57	16	14	none	10.30	-0.02	0.02	0.527	0.556	0.542	0.542
5/16/19	11:30	57	17	15	none	10.40	0.04	0.08	0.619	0.700	0.520	0.617
5/16/19	11:30	57	18	16	none	10.10	0.03	0.17	0.523	0.588	0.497	0.538
5/16/19	11:30	57	19	17	none	10.10	-0.46	0.07	0.871	0.490	0.512	0.648
5/16/19	11:30	57	20	18	none	10.30	0.08	0.07	0.422	0.333	0.441	0.401
5/16/19	11:30	57	21	19	none	10.30	0.06	0.12	0.410	0.348	0.419	0.393
5/16/19	11:30	57	22	20	none	10.30	-0.02	0.12	0.522	0.642	0.600	0.590
5/16/19	11:30	57	23	21	none	10.00	0.09	0.02	0.512	0.525	0.515	0.517
5/16/19	11:30	57	24	22	none	10.00	-0.04	-0.03	0.877	0.552	0.523	0.670
5/16/19	11:30	57	25	23	none	10.02	-0.05	0.04	0.520	0.644	0.660	0.612
5/16/19	11:30	57	26	24	none	10.10	-0.18	0.53	0.809	1.110	0.654	0.877
5/16/19	11:30	57	27	25	none	10.30	0.02	-0.02	0.584	0.597	0.748	0.647
5/16/19	11:30	57	28	13	none	10.30	-0.05	0.10	0.499	0.574	0.520	0.532
5/16/19	11:57	58	2	13	max	10.02	-0.01	0.02	0.684	0.546	0.620	0.619
5/16/19	11:57	58	3	1	max	10.00	0.14	0.16	1.090	1.230	0.738	1.040
5/16/19	11:57	58	4	2	max	10.02	-0.08	-0.09	0.913	0.737	0.725	0.796
5/16/19	11:57	58	5	3	max	10.10	0.33	0.14	1.060	1.360	0.832	1.100
5/16/19	11:57	58	6	4	max	10.10	0.02	0.03	1.130	1.380	0.810	1.130
5/16/19	11:57	58	7	5	max	10.30	-0.10	0.14	0.927	0.889	0.862	0.893
5/16/19	11:57	58	8	6	max	10.10	0.00	0.11	1.020	0.725	0.744	0.840
5/16/19	11:57	58	9	7	max	10.02	-0.08	0.00	1.020	0.680	0.614	0.793
5/16/19	11:57	58	10	8	max	10.02	0.06	0.03	0.941	0.740	0.787	0.827

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	11:57	58	11	9	max	10.02	0.17	0.05	0.705	0.936	0.658	0.776
5/16/19	11:57	58	12	10	max	10.02	0.03	0.06	0.778	0.906	0.771	0.821
5/16/19	11:57	58	13	11	max	10.10	-0.03	0.05	0.958	0.829	0.633	0.818
5/16/19	11:57	58	14	12	max	10.02	-0.03	-0.02	0.777	0.571	0.707	0.690
5/16/19	11:57	58	15	13	max	10.02	-0.01	0.03	0.755	0.545	0.598	0.639
5/16/19	11:57	58	16	14	max	10.02	0.05	0.16	0.817	0.548	0.632	0.675
5/16/19	11:57	58	17	15	max	10.30	0.00	0.13	0.918	0.963	0.566	0.835
5/16/19	11:57	58	18	16	max	9.98	0.03	0.13	0.784	0.679	0.519	0.670
5/16/19	11:57	58	19	17	max	9.96	-0.03	0.15	0.962	1.040	0.744	0.925
5/16/19	11:57	58	20	18	max	10.10	0.03	0.04	0.661	0.587	0.616	0.622
5/16/19	11:57	58	21	19	max	10.10	0.08	0.12	0.724	0.622	0.465	0.613
5/16/19	11:57	58	22	20	max	10.02	-0.03	0.08	0.813	0.895	0.682	0.801
5/16/19	11:57	58	23	21	max	9.93	0.05	0.19	0.816	0.662	0.596	0.697
5/16/19	11:57	58	24	22	max	10.10	-0.04	-0.15	1.060	0.632	0.706	0.820
5/16/19	11:57	58	25	23	max	10.10	0.03	0.12	0.667	0.859	0.647	0.731
5/16/19	11:57	58	26	24	max	10.00	-0.07	0.41	0.709	0.797	0.849	0.787
5/16/19	11:57	58	27	25	max	10.30	-0.08	-0.09	0.725	0.886	0.834	0.818
5/16/19	11:57	58	28	13	max	10.02	0.00	0.03	0.716	0.533	0.603	0.622
5/16/19	12:29	59	2	13	none	10.30	-0.03	0.08	0.520	0.565	0.581	0.556
5/16/19	12:29	59	3	1	none	10.00	0.07	0.18	0.686	0.925	0.557	0.739
5/16/19	12:29	59	4	2	none	10.02	-0.10	-0.11	0.521	0.724	0.578	0.614
5/16/19	12:29	59	5	3	none	10.10	0.02	0.11	0.523	0.597	0.494	0.540
5/16/19	12:29	59	6	4	none	10.10	0.02	0.03	0.922	1.260	0.723	0.991
5/16/19	12:29	59	7	5	none	10.30	-0.15	0.06	0.527	0.601	0.664	0.600
5/16/19	12:29	59	8	6	none	10.00	-0.03	0.14	0.696	0.539	0.443	0.569
5/16/19	12:29	59	9	7	none	10.02	-0.07	0.03	0.393	0.427	0.433	0.418
5/16/19	12:29	59	10	8	none	10.02	0.14	0.11	0.479	0.503	0.482	0.488
5/16/19	12:29	59	11	9	none	10.30	0.08	0.03	0.564	0.599	0.494	0.554

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	12:29	59	12	10	none	10.30	0.03	0.09	0.492	0.843	0.616	0.666
5/16/19	12:29	59	13	11	none	10.02	-0.05	0.10	0.611	0.841	0.571	0.685
5/16/19	12:29	59	14	12	none	10.30	-0.07	-0.02	0.596	0.583	0.735	0.642
5/16/19	12:29	59	15	13	none	10.30	-0.07	0.10	0.498	0.581	0.501	0.528
5/16/19	12:29	59	16	14	none	10.30	-0.03	0.02	0.525	0.554	0.529	0.536
5/16/19	12:29	59	17	15	none	10.50	0.03	0.07	0.630	0.778	0.521	0.652
5/16/19	12:29	59	18	16	none	10.10	0.03	0.16	0.544	0.598	0.506	0.550
5/16/19	12:29	59	19	17	none	10.10	-0.47	0.07	0.892	0.517	0.542	0.672
5/16/19	12:29	59	20	18	none	10.30	0.04	0.10	0.440	0.442	0.488	0.457
5/16/19	12:29	59	21	19	none	10.30	0.14	0.11	0.419	0.614	0.463	0.506
5/16/19	12:29	59	22	20	none	10.30	-0.02	0.12	0.518	0.652	0.621	0.600
5/16/19	12:29	59	23	21	none	10.00	0.08	0.02	0.524	0.544	0.578	0.549
5/16/19	12:29	59	24	22	none	10.00	-0.06	-0.03	0.894	0.609	0.565	0.705
5/16/19	12:29	59	25	23	none	10.02	0.01	0.02	0.565	1.030	0.965	0.877
5/16/19	12:29	59	26	24	none	10.10	-0.09	0.57	0.749	1.020	0.661	0.824
5/16/19	12:29	59	27	25	none	10.40	-0.01	-0.19	0.652	0.612	0.867	0.719
5/16/19	12:29	59	28	13	none	10.30	-0.04	0.09	0.503	0.571	0.530	0.535
5/16/19	12:57	60	2	13	max	10.30	-0.02	0.05	0.693	0.592	0.594	0.628
5/16/19	12:57	60	3	1	max	10.10	0.09	0.16	1.010	1.080	0.678	0.941
5/16/19	12:57	60	4	2	max	10.30	-0.04	-0.13	0.788	0.672	0.746	0.737
5/16/19	12:57	60	5	3	max	10.02	0.03	0.11	0.799	1.060	0.674	0.860
5/16/19	12:57	60	6	4	max	10.02	0.15	0.02	0.910	1.010	0.794	0.909
5/16/19	12:57	60	7	5	max	10.40	-0.06	0.08	0.796	0.848	0.700	0.784
5/16/19	12:57	60	8	6	max	10.10	-0.04	0.12	0.927	0.692	0.608	0.754
5/16/19	12:57	60	9	7	max	10.30	-0.04	0.02	0.611	0.608	0.554	0.591
5/16/19	12:57	60	10	8	max	10.30	0.07	0.04	0.715	0.626	0.625	0.656
5/16/19	12:57	60	11	9	max	10.30	0.14	0.03	0.670	0.904	0.642	0.748
5/16/19	12:57	60	12	10	max	10.30	0.03	0.05	0.730	0.855	0.658	0.752

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	12:57	60	13	11	max	10.02	-0.03	0.06	0.731	0.797	0.617	0.719
5/16/19	12:57	60	14	12	max	10.02	-0.02	0.01	0.717	0.599	0.653	0.658
5/16/19	12:57	60	15	13	max	10.30	-0.02	0.06	0.657	0.601	0.588	0.616
5/16/19	12:57	60	16	14	max	10.30	0.04	0.15	0.615	0.572	0.594	0.594
5/16/19	12:57	60	17	15	max	10.40	-0.01	0.13	0.708	0.958	0.571	0.763
5/16/19	12:57	60	18	16	max	10.10	0.03	0.13	0.667	0.592	0.471	0.582
5/16/19	12:57	60	19	17	max	10.10	-0.02	0.14	0.913	0.764	0.572	0.763
5/16/19	12:57	60	20	18	max	10.30	0.00	0.05	0.574	0.506	0.501	0.528
5/16/19	12:57	60	21	19	max	10.30	0.04	0.11	0.531	0.486	0.418	0.481
5/16/19	12:57	60	22	20	max	10.30	-0.02	0.09	0.605	0.892	0.591	0.710
5/16/19	12:57	60	23	21	max	10.10	0.05	0.19	0.664	0.602	0.545	0.606
5/16/19	12:57	60	24	22	max	10.02	-0.03	-0.16	1.060	0.585	0.664	0.798
5/16/19	12:57	60	25	23	max	10.30	0.02	0.12	0.586	0.695	0.576	0.621
5/16/19	12:57	60	26	24	max	10.02	-0.06	0.40	0.676	0.841	0.750	0.759
5/16/19	12:57	60	27	25	max	10.50	-0.09	-0.03	0.722	0.980	0.830	0.851
5/16/19	12:57	60	28	13	max	10.30	-0.01	0.06	0.637	0.604	0.588	0.610
5/16/19	14:45	61	2	13	none	10.30	-0.07	0.08	0.512	0.587	0.531	0.544
5/16/19	14:45	61	3	1	none	9.97	0.11	0.16	0.683	0.731	0.508	0.648
5/16/19	14:45	61	4	2	none	10.10	-0.16	-0.11	0.513	0.731	0.524	0.598
5/16/19	14:45	61	5	3	none	10.10	0.02	0.12	0.529	0.661	0.513	0.571
5/16/19	14:45	61	6	4	none	10.10	0.18	0.03	0.710	1.000	0.641	0.799
5/16/19	14:45	61	7	5	none	10.30	-0.11	0.06	0.538	0.688	0.637	0.624
5/16/19	14:45	61	8	6	none	10.10	-0.04	0.17	0.459	0.542	0.406	0.472
5/16/19	14:45	61	9	7	none	10.02	-0.06	0.01	0.390	0.384	0.402	0.392
5/16/19	14:45	61	10	8	none	10.02	0.11	0.10	0.483	0.455	0.472	0.470
5/16/19	14:45	61	11	9	none	10.30	0.12	0.02	0.572	0.662	0.592	0.610
5/16/19	14:45	61	12	10	none	10.30	0.03	0.10	0.509	0.760	0.542	0.614
5/16/19	14:45	61	13	11	none	10.02	-0.08	0.09	0.612	0.876	0.564	0.698

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	14:45	61	14	12	none	10.30	0.00	0.01	0.561	0.532	0.658	0.586
5/16/19	14:45	61	15	13	none	10.30	-0.01	0.08	0.526	0.582	0.575	0.562
5/16/19	14:45	61	16	14	none	10.30	0.07	0.19	0.520	0.515	0.594	0.544
5/16/19	14:45	61	17	15	none	10.40	-0.03	0.09	0.596	0.797	0.553	0.657
5/16/19	14:45	61	18	16	none	10.10	-0.07	0.16	0.606	0.997	0.665	0.776
5/16/19	14:45	61	19	17	none	10.10	-0.46	0.07	0.908	0.829	0.740	0.828
5/16/19	14:45	61	20	18	none	10.30	0.10	0.05	0.441	0.424	0.475	0.447
5/16/19	14:45	61	21	19	none	10.30	0.11	0.12	0.436	0.541	0.416	0.467
5/16/19	14:45	61	22	20	none	10.30	-0.32	0.08	0.458	0.647	0.566	0.563
5/16/19	14:45	61	23	21	none	10.00	0.08	0.02	0.550	0.578	0.618	0.583
5/16/19	14:45	61	24	22	none	10.10	-0.05	-0.02	0.954	0.642	0.637	0.759
5/16/19	14:45	61	25	23	none	10.02	0.00	0.06	0.588	0.939	0.847	0.805
5/16/19	14:45	61	26	24	none	10.10	-0.18	0.57	0.890	1.180	0.750	0.958
5/16/19	14:45	61	27	25	none	10.40	-0.02	-0.02	0.665	0.636	0.911	0.748
5/16/19	14:45	61	28	13	none	10.30	-0.04	0.09	0.515	0.568	0.556	0.547
5/16/19	15:20	62	2	13	max	10.30	-0.03	0.06	0.589	0.616	0.587	0.598
5/16/19	15:20	62	3	1	max	9.98	-0.03	0.19	0.988	0.976	0.739	0.908
5/16/19	15:20	62	4	2	max	10.02	0.03	-0.11	0.893	0.861	0.870	0.875
5/16/19	15:20	62	5	3	max	10.00	0.03	0.05	2.140	2.210	2.040	2.130
5/16/19	15:20	62	6	4	max	10.10	0.16	0.13	1.300	1.200	1.280	1.260
5/16/19	15:20	62	7	5	max	10.02	0.03	0.19	1.080	0.939	0.984	1.000
5/16/19	15:20	62	8	6	max	10.02	-0.04	0.15	0.581	0.573	0.459	0.541
5/16/19	15:20	62	9	7	max	10.02	0.00	0.01	0.664	0.524	0.551	0.582
5/16/19	15:20	62	10	8	max	10.02	0.05	0.11	0.775	0.584	0.726	0.700
5/16/19	15:20	62	11	9	max	10.30	0.11	0.04	0.697	0.868	0.666	0.749
5/16/19	15:20	62	12	10	max	10.30	0.03	0.02	0.792	1.030	0.807	0.883
5/16/19	15:20	62	13	11	max	10.10	-0.04	0.10	0.709	0.786	0.594	0.701
5/16/19	15:20	62	14	12	max	10.02	-0.05	0.03	0.636	0.650	0.643	0.643

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/16/19	15:20	62	15	13	max	10.02	-0.02	0.08	0.603	0.619	0.581	0.601
5/16/19	15:20	62	16	14	max	10.02	0.02	0.16	0.642	0.603	0.616	0.621
5/16/19	15:20	62	17	15	max	10.30	-0.02	0.13	0.675	0.908	0.552	0.727
5/16/19	15:20	62	18	16	max	10.10	0.02	0.14	0.546	0.674	0.470	0.570
5/16/19	15:20	62	19	17	max	10.10	-0.03	0.07	1.110	0.757	0.624	0.854
5/16/19	15:20	62	20	18	max	10.02	-0.05	0.09	0.509	0.609	0.442	0.525
5/16/19	15:20	62	21	19	max	10.30	0.02	0.14	0.454	0.460	0.454	0.456
5/16/19	15:20	62	22	20	max	10.30	-0.19	0.10	0.617	0.801	0.588	0.675
5/16/19	15:20	62	23	21	max	10.10	0.05	0.16	0.717	0.694	0.640	0.684
5/16/19	15:20	62	24	22	max	10.02	-0.03	-0.15	1.020	0.606	0.734	0.806
5/16/19	15:20	62	25	23	max	10.30	-0.01	0.14	0.594	0.679	0.548	0.610
5/16/19	15:20	62	26	24	max	10.02	-0.06	0.39	0.682	0.905	0.763	0.789
5/16/19	15:20	62	27	25	max	10.50	-0.15	0.06	0.710	0.800	0.736	0.750
5/16/19	15:20	62	28	13	max	10.02	-0.02	0.08	0.578	0.610	0.556	0.582
5/20/19	11:12	64	2	13	none	10.30	-0.06	0.09	0.509	0.588	0.535	0.545
5/20/19	11:12	64	3	1	none	9.97	0.10	0.17	0.661	0.785	0.507	0.661
5/20/19	11:12	64	4	2	none	10.10	-0.16	-0.10	0.480	0.665	0.480	0.549
5/20/19	11:12	64	5	3	none	10.10	0.19	0.12	0.466	0.548	0.425	0.482
5/20/19	11:12	64	6	4	none	10.10	0.17	0.30	0.836	0.960	0.782	0.862
5/20/19	11:12	64	7	5	none	10.30	-0.09	0.06	0.528	0.554	0.615	0.567
5/20/19	11:12	64	8	6	none	10.10	-0.04	0.17	0.452	0.507	0.404	0.456
5/20/19	11:12	64	9	7	none	10.02	-0.12	0.05	0.417	0.446	0.433	0.432
5/20/19	11:12	64	10	8	none	10.10	0.11	0.13	0.515	0.626	0.515	0.554
5/20/19	11:12	64	11	9	none	10.30	0.07	0.04	0.564	0.676	0.536	0.595
5/20/19	11:12	64	12	10	none	10.02	0.41	0.08	0.461	0.690	0.581	0.585
5/20/19	11:12	64	13	11	none	10.10	-0.02	0.10	0.622	0.775	0.587	0.666
5/20/19	11:12	64	14	12	none	10.02	-0.05	-0.03	0.610	0.554	0.785	0.657
5/20/19	11:12	64	15	13	none	10.30	-0.04	0.09	0.523	0.577	0.555	0.552

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	11:12	64	16	14	none	10.30	0.02	0.02	0.546	0.528	0.604	0.560
5/20/19	11:12	64	17	15	none	10.40	-0.01	0.06	0.639	0.804	0.572	0.679
5/20/19	11:12	64	18	16	none	10.10	0.05	0.18	0.505	0.556	0.498	0.520
5/20/19	11:12	64	19	17	none	10.10	-0.44	0.07	0.958	0.552	0.526	0.707
5/20/19	11:12	64	20	18	none	10.30	0.11	0.07	0.422	0.370	0.391	0.395
5/20/19	11:12	64	21	19	none	10.30	0.06	0.12	0.413	0.379	0.415	0.403
5/20/19	11:12	64	22	20	none	10.30	-0.03	0.09	0.496	0.697	0.582	0.597
5/20/19	11:12	64	23	21	none	10.00	0.06	0.03	0.535	0.612	0.518	0.557
5/20/19	11:12	64	24	22	none	10.00	-0.08	-0.03	0.902	0.632	0.576	0.717
5/20/19	11:12	64	25	23	none	10.02	-0.02	0.03	0.551	0.759	0.772	0.702
5/20/19	11:12	64	26	24	none	10.10	-0.19	0.57	0.936	1.180	0.814	0.990
5/20/19	11:12	64	27	25	none	10.40	0.01	-0.17	0.640	0.572	0.816	0.684
5/20/19	11:12	64	28	13	none	10.30	-0.03	0.09	0.521	0.569	0.558	0.550
5/20/19	11:40	65	2	13	max	10.30	-0.04	0.05	0.818	0.618	0.622	0.692
5/20/19	11:40	65	3	1	max	10.00	0.05	0.16	0.932	0.899	0.598	0.824
5/20/19	11:40	65	4	2	max	10.02	0.00	-0.13	0.712	0.581	0.612	0.637
5/20/19	11:40	65	5	3	max	10.02	0.02	0.12	0.717	0.786	0.564	0.695
5/20/19	11:40	65	6	4	max	10.02	0.13	0.02	0.688	0.672	0.632	0.665
5/20/19	11:40	65	7	5	max	10.30	0.01	0.10	0.712	0.645	0.607	0.656
5/20/19	11:40	65	8	6	max	10.10	-0.04	0.15	0.706	0.639	0.529	0.629
5/20/19	11:40	65	9	7	max	10.02	-0.03	0.03	0.704	0.570	0.502	0.598
5/20/19	11:40	65	10	8	max	10.02	0.08	0.10	0.758	0.544	0.613	0.645
5/20/19	11:40	65	11	9	max	10.30	0.09	0.02	0.624	0.679	0.597	0.634
5/20/19	11:40	65	12	10	max	10.30	0.03	0.03	0.675	0.942	0.571	0.746
5/20/19	11:40	65	13	11	max	10.02	-0.02	0.06	0.866	0.782	0.610	0.760
5/20/19	11:40	65	14	12	max	10.30	-0.05	-0.02	0.762	0.625	0.692	0.695
5/20/19	11:40	65	15	13	max	10.30	-0.04	0.06	0.726	0.616	0.617	0.655
5/20/19	11:40	65	16	14	max	10.02	0.01	0.13	0.755	0.604	0.621	0.663

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	11:40	65	17	15	max	10.30	0.06	0.13	0.789	0.893	0.558	0.760
5/20/19	11:40	65	18	16	max	10.02	0.01	0.14	0.978	0.939	0.568	0.849
5/20/19	11:40	65	19	17	max	10.10	-0.31	0.05	1.230	1.050	0.894	1.070
5/20/19	11:40	65	20	18	max	10.30	0.03	0.07	0.725	0.587	0.630	0.650
5/20/19	11:40	65	21	19	max	10.30	0.06	0.11	0.771	0.658	0.487	0.649
5/20/19	11:40	65	22	20	max	10.40	-0.02	0.09	0.831	0.893	0.697	0.811
5/20/19	11:40	65	23	21	max	10.10	0.06	0.02	1.080	0.828	0.694	0.883
5/20/19	11:40	65	24	22	max	10.02	-0.04	-0.16	1.120	0.747	0.859	0.924
5/20/19	11:40	65	25	23	max	10.02	-0.03	0.12	0.866	0.992	0.845	0.903
5/20/19	11:40	65	26	24	max	10.10	-0.10	0.47	0.930	1.010	0.825	0.926
5/20/19	11:40	65	27	25	max	10.30	-0.11	-0.11	0.995	0.932	1.030	0.986
5/20/19	11:40	65	28	13	max	10.02	-0.04	0.05	0.762	0.613	0.613	0.666
5/20/19	12:17	66	2	13	max	10.30	-0.03	0.05	0.739	0.621	0.605	0.658
5/20/19	12:17	66	3	1	max	10.00	0.05	0.16	0.888	0.907	0.584	0.807
5/20/19	12:17	66	4	2	max	10.02	0.00	-0.12	0.751	0.551	0.596	0.638
5/20/19	12:17	66	5	3	max	10.02	0.02	0.13	0.746	0.757	0.529	0.685
5/20/19	12:17	66	6	4	max	10.10	0.13	0.02	0.670	0.655	0.620	0.649
5/20/19	12:17	66	7	5	max	10.30	0.02	0.10	0.611	0.576	0.568	0.585
5/20/19	12:17	66	8	6	max	10.10	-0.05	0.15	0.682	0.634	0.525	0.617
5/20/19	12:17	66	9	7	max	10.02	-0.02	0.03	0.639	0.514	0.483	0.550
5/20/19	12:17	66	10	8	max	10.02	0.07	0.10	0.698	0.513	0.598	0.607
5/20/19	12:17	66	11	9	max	10.30	0.08	0.02	0.593	0.642	0.572	0.603
5/20/19	12:17	66	12	10	max	10.02	0.03	0.03	0.624	0.948	0.541	0.726
5/20/19	12:17	66	13	11	max	10.10	-0.02	0.06	0.924	0.769	0.611	0.778
5/20/19	12:17	66	14	12	max	10.02	-0.06	-0.01	0.960	0.642	0.698	0.779
5/20/19	12:17	66	15	13	max	10.02	-0.05	0.05	0.915	0.636	0.642	0.742
5/20/19	12:17	66	16	14	max	10.02	-0.01	0.13	0.763	0.602	0.596	0.658
5/20/19	12:17	66	17	15	max	10.40	0.04	0.14	0.798	0.838	0.553	0.740

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	12:17	66	18	16	max	10.02	0.01	0.14	0.937	0.910	0.554	0.819
5/20/19	12:17	66	19	17	max	10.02	-0.31	0.04	1.200	1.030	0.896	1.050
5/20/19	12:17	66	20	18	max	10.30	0.02	0.07	0.760	0.607	0.617	0.665
5/20/19	12:17	66	21	19	max	10.30	0.05	0.11	0.768	0.673	0.514	0.660
5/20/19	12:17	66	22	20	max	10.30	-0.02	0.09	0.867	0.851	0.708	0.812
5/20/19	12:17	66	23	21	max	10.10	0.06	0.02	1.170	0.793	0.677	0.905
5/20/19	12:17	66	24	22	max	10.30	-0.04	-0.15	1.030	0.747	0.839	0.880
5/20/19	12:17	66	25	23	max	10.02	-0.05	0.15	0.888	0.933	0.717	0.851
5/20/19	12:17	66	26	24	max	10.02	-0.11	0.48	0.947	1.000	0.831	0.929
5/20/19	12:17	66	27	25	max	10.40	-0.12	-0.08	0.940	1.010	1.120	1.030
5/20/19	12:17	66	28	13	max	10.30	-0.03	0.06	0.766	0.608	0.618	0.668
5/20/19	14:20	67	2	13	none	10.30	-0.05	0.09	0.518	0.584	0.546	0.550
5/20/19	14:20	67	3	1	none	10.00	0.09	0.17	0.677	0.771	0.487	0.656
5/20/19	14:20	67	4	2	none	10.02	-0.14	-0.11	0.506	0.616	0.509	0.546
5/20/19	14:20	67	5	3	none	10.10	0.02	0.11	0.482	0.534	0.444	0.488
5/20/19	14:20	67	6	4	none	10.10	0.02	0.03	0.744	1.010	0.589	0.802
5/20/19	14:20	67	7	5	none	10.30	-0.13	0.05	0.517	0.603	0.603	0.576
5/20/19	14:20	67	8	6	none	10.10	-0.06	0.17	0.473	0.552	0.392	0.477
5/20/19	14:20	67	9	7	none	10.02	-0.07	0.03	0.371	0.348	0.414	0.378
5/20/19	14:20	67	10	8	none	10.02	0.13	0.11	0.437	0.361	0.420	0.407
5/20/19	14:20	67	11	9	none	10.30	0.08	0.07	0.543	0.529	0.370	0.487
5/20/19	14:20	67	12	10	none	10.30	0.03	0.10	0.488	0.735	0.473	0.578
5/20/19	14:20	67	13	11	none	10.02	-0.05	0.10	0.608	0.801	0.576	0.669
5/20/19	14:20	67	14	12	none	10.30	-0.06	-0.02	0.601	0.557	0.751	0.642
5/20/19	14:20	67	15	13	none	10.30	-0.05	0.08	0.508	0.581	0.563	0.551
5/20/19	14:20	67	16	14	none	10.30	-0.02	0.02	0.539	0.556	0.548	0.548
5/20/19	14:20	67	17	15	none	10.50	0.01	0.07	0.642	0.786	0.549	0.666
5/20/19	14:20	67	18	16	none	10.10	0.07	0.16	0.534	0.595	0.520	0.550

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	14:20	67	19	17	none	10.10	-0.45	0.07	0.965	0.553	0.534	0.712
5/20/19	14:20	67	20	18	none	10.30	0.07	0.08	0.415	0.442	0.464	0.441
5/20/19	14:20	67	21	19	none	10.30	0.11	0.09	0.396	0.487	0.378	0.423
5/20/19	14:20	67	22	20	none	10.40	-0.03	0.07	0.466	0.614	0.530	0.540
5/20/19	14:20	67	23	21	none	10.00	0.09	0.02	0.537	0.523	0.578	0.547
5/20/19	14:20	67	24	22	none	10.10	-0.06	-0.03	1.020	0.636	0.600	0.774
5/20/19	14:20	67	25	23	none	10.02	-0.01	0.01	0.519	0.798	0.685	0.677
5/20/19	14:20	67	26	24	none	10.10	-0.18	0.57	0.909	1.180	0.764	0.968
5/20/19	14:20	67	27	25	none	10.40	0.00	-0.19	0.662	0.588	0.808	0.692
5/20/19	14:20	67	28	13	none	10.30	-0.06	0.09	0.494	0.583	0.515	0.532
5/20/19	15:32	70	2	13	max	10.30	-0.04	0.04	0.666	0.630	0.607	0.635
5/20/19	15:32	70	3	1	max	10.10	0.05	0.15	0.871	0.872	0.562	0.782
5/20/19	15:32	70	4	2	max	10.02	-0.01	-0.11	0.698	0.596	0.602	0.634
5/20/19	15:32	70	5	3	max	10.02	0.02	0.12	0.745	0.785	0.534	0.697
5/20/19	15:32	70	6	4	max	10.02	0.13	0.03	0.779	0.744	0.640	0.723
5/20/19	15:32	70	7	5	max	10.30	0.02	0.10	0.792	0.640	0.585	0.678
5/20/19	15:32	70	8	6	max	10.10	-0.05	0.15	0.682	0.581	0.486	0.588
5/20/19	15:32	70	9	7	max	10.02	-0.02	0.02	0.717	0.533	0.495	0.590
5/20/19	15:32	70	10	8	max	10.02	0.06	0.10	0.726	0.520	0.606	0.623
5/20/19	15:32	70	11	9	max	10.02	0.07	0.02	0.638	0.632	0.577	0.616
5/20/19	15:32	70	12	10	max	10.30	0.02	0.03	0.636	0.911	0.548	0.715
5/20/19	15:32	70	13	11	max	10.02	-0.04	0.07	0.760	0.779	0.588	0.714
5/20/19	15:32	70	14	12	max	10.30	-0.05	-0.01	0.690	0.635	0.673	0.667
5/20/19	15:32	70	15	13	max	10.30	-0.03	0.06	0.773	0.626	0.612	0.674
5/20/19	15:32	70	16	14	max	10.02	0.00	0.12	0.663	0.594	0.615	0.625
5/20/19	15:32	70	17	15	max	10.30	0.04	0.14	0.767	0.808	0.557	0.719
5/20/19	15:32	70	18	16	max	10.10	0.01	0.14	1.020	0.882	0.542	0.838
5/20/19	15:32	70	19	17	max	10.02	-0.03	0.06	1.120	1.080	0.893	1.030

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	15:32	70	20	18	max	10.30	0.02	0.07	0.747	0.549	0.581	0.632
5/20/19	15:32	70	21	19	max	10.30	0.05	0.11	0.815	0.644	0.485	0.662
5/20/19	15:32	70	22	20	max	10.30	-0.02	0.09	0.924	0.873	0.703	0.839
5/20/19	15:32	70	23	21	max	10.10	0.04	0.02	1.190	0.870	0.644	0.928
5/20/19	15:32	70	24	22	max	10.30	-0.03	-0.16	1.160	0.743	0.834	0.929
5/20/19	15:32	70	25	23	max	10.30	-0.03	0.14	0.879	0.929	0.740	0.853
5/20/19	15:32	70	26	24	max	10.02	-0.12	0.46	1.040	1.030	0.844	0.976
5/20/19	15:32	70	27	25	max	10.50	-0.13	-0.07	1.040	0.980	1.090	1.040
5/20/19	15:32	70	28	13	max	10.10	-0.04	0.07	0.962	0.628	0.623	0.754
5/20/19	16:13	71	2	13	none	10.30	-0.05	0.08	0.523	0.587	0.553	0.555
5/20/19	16:13	71	3	1	none	9.99	0.07	0.16	0.699	0.814	0.485	0.680
5/20/19	16:13	71	4	2	none	10.02	-0.09	-0.10	0.507	0.680	0.496	0.567
5/20/19	16:13	71	5	3	none	10.10	0.03	0.11	0.584	0.681	0.572	0.615
5/20/19	16:13	71	6	4	none	10.10	0.02	0.03	0.878	1.230	0.735	0.970
5/20/19	16:13	71	7	5	none	10.30	-0.13	0.05	0.529	0.605	0.621	0.587
5/20/19	16:13	71	8	6	none	10.10	-0.06	0.16	0.469	0.537	0.390	0.470
5/20/19	16:13	71	9	7	none	10.02	-0.06	0.02	0.411	0.382	0.423	0.406
5/20/19	16:13	71	10	8	none	10.02	0.09	0.07	0.462	0.377	0.458	0.434
5/20/19	16:13	71	11	9	none	10.30	0.09	0.03	0.557	0.615	0.463	0.549
5/20/19	16:13	71	12	10	none	10.02	0.31	0.10	0.438	0.545	0.463	0.484
5/20/19	16:13	71	13	11	none	10.02	-0.08	0.10	0.605	0.825	0.584	0.680
5/20/19	16:13	71	14	12	none	10.30	-0.06	-0.03	0.611	0.559	0.783	0.658
5/20/19	16:13	71	15	13	none	10.30	-0.05	0.08	0.519	0.584	0.563	0.556
5/20/19	16:13	71	16	14	none	10.30	-0.03	0.02	0.526	0.560	0.545	0.544
5/20/19	16:13	71	17	15	none	10.50	0.02	0.06	0.615	0.734	0.548	0.637
5/20/19	16:13	71	18	16	none	10.10	0.04	0.17	0.521	0.648	0.487	0.556
5/20/19	16:13	71	19	17	none	10.10	-0.46	0.09	0.882	0.522	0.517	0.663
5/20/19	16:13	71	20	18	none	10.30	0.10	0.09	0.413	0.378	0.394	0.395

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	16:13	71	21	19	none	10.30	0.09	0.10	0.414	0.468	0.402	0.429
5/20/19	16:13	71	22	20	none	10.30	-0.02	0.11	0.529	0.617	0.625	0.592
5/20/19	16:13	71	23	21	none	10.00	0.09	0.02	0.549	0.547	0.663	0.589
5/20/19	16:13	71	24	22	none	10.10	-0.08	-0.03	1.070	0.635	0.616	0.800
5/20/19	16:13	71	25	23	none	10.02	-0.04	0.04	0.548	0.748	0.802	0.708
5/20/19	16:13	71	26	24	none	10.10	-0.02	0.54	0.934	1.210	0.844	1.010
5/20/19	16:13	71	27	25	none	10.40	0.03	-0.02	0.736	0.622	0.950	0.781
5/20/19	16:13	71	28	13	none	10.30	-0.04	0.09	0.506	0.584	0.547	0.547
5/20/19	16:43	72	2	13	max	10.30	-0.04	0.01	0.869	0.573	0.698	0.724
5/20/19	16:43	72	3	1	max	10.00	0.12	0.16	1.180	1.290	0.776	1.110
5/20/19	16:43	72	4	2	max	10.10	-0.07	-0.08	0.884	0.816	0.689	0.800
5/20/19	16:43	72	5	3	max	10.10	0.03	0.15	0.936	1.260	0.725	0.997
5/20/19	16:43	72	6	4	max	10.10	0.15	0.03	0.846	0.953	0.720	0.845
5/20/19	16:43	72	7	5	max	10.02	-0.07	0.14	0.940	0.769	0.755	0.826
5/20/19	16:43	72	8	6	max	10.10	0.01	0.13	0.917	0.678	0.739	0.784
5/20/19	16:43	72	9	7	max	10.02	-0.08	0.00	0.848	0.672	0.559	0.703
5/20/19	16:43	72	10	8	max	10.02	0.03	0.05	0.964	0.716	0.857	0.852
5/20/19	16:43	72	11	9	max	10.02	0.14	0.03	0.748	1.040	0.780	0.864
5/20/19	16:43	72	12	10	max	10.02	0.30	0.00	0.749	0.951	0.795	0.836
5/20/19	16:43	72	13	11	max	10.02	-0.02	0.06	1.090	0.837	0.700	0.891
5/20/19	16:43	72	14	12	max	10.30	-0.06	-0.08	0.889	0.614	0.888	0.808
5/20/19	16:43	72	15	13	max	10.02	-0.04	0.01	0.951	0.580	0.673	0.751
5/20/19	16:43	72	16	14	max	10.02	0.01	0.15	0.968	0.591	0.737	0.781
5/20/19	16:43	72	17	15	max	10.30	0.06	0.13	0.846	0.961	0.603	0.817
5/20/19	16:43	72	18	16	max	10.10	0.01	0.13	0.856	0.874	0.590	0.784
5/20/19	16:43	72	19	17	max	10.10	-0.33	0.11	1.090	1.070	0.917	1.030
5/20/19	16:43	72	20	18	max	10.30	0.04	0.07	0.942	0.645	0.768	0.795
5/20/19	16:43	72	21	19	max	10.02	0.09	0.10	0.738	0.613	0.502	0.625

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/20/19	16:43	72	22	20	max	10.30	-0.02	0.06	0.808	0.851	0.742	0.802
5/20/19	16:43	72	23	21	max	10.00	0.06	0.02	0.993	0.710	0.682	0.808
5/20/19	16:43	72	24	22	max	10.10	-0.06	-0.15	1.050	0.719	0.822	0.876
5/20/19	16:43	72	25	23	max	10.02	-0.01	0.11	0.867	1.120	0.883	0.963
5/20/19	16:43	72	26	24	max	10.00	-0.12	0.49	0.879	1.130	0.877	0.971
5/20/19	16:43	72	27	25	max	10.30	-0.02	-0.16	0.880	1.020	1.010	0.972
5/20/19	16:43	72	28	13	max	10.30	-0.03	0.02	0.963	0.578	0.705	0.765
5/21/19	7:30	74	2	13	none	10.02	-0.03	0.09	0.525	0.562	0.557	0.548
5/21/19	7:30	74	3	1	none	9.95	0.11	0.16	0.682	0.798	0.495	0.670
5/21/19	7:30	74	4	2	none	10.10	-0.14	-0.13	0.544	0.727	0.529	0.607
5/21/19	7:30	74	5	3	none	10.10	0.02	0.12	0.513	0.690	0.505	0.576
5/21/19	7:30	74	6	4	none	10.10	0.02	0.03	0.820	1.130	0.753	0.914
5/21/19	7:30	74	7	5	none	10.02	-0.12	0.06	0.536	0.586	0.636	0.588
5/21/19	7:30	74	8	6	none	10.00	-0.02	0.16	0.469	0.524	0.410	0.470
5/21/19	7:30	74	9	7	none	10.02	-0.08	0.05	0.375	0.366	0.409	0.384
5/21/19	7:30	74	10	8	none	10.10	0.14	0.11	0.453	0.431	0.426	0.437
5/21/19	7:30	74	11	9	none	10.02	0.14	0.07	0.569	0.602	0.447	0.544
5/21/19	7:30	74	12	10	none	10.02	0.03	0.13	0.488	0.703	0.469	0.564
5/21/19	7:30	74	13	11	none	10.10	-0.05	0.11	0.608	0.806	0.574	0.670
5/21/19	7:30	74	14	12	none	10.02	-0.05	-0.02	0.614	0.552	0.799	0.663
5/21/19	7:30	74	15	13	none	10.02	-0.04	0.10	0.504	0.569	0.535	0.537
5/21/19	7:30	74	16	14	none	10.30	0.00	0.02	0.540	0.555	0.567	0.554
5/21/19	7:30	74	17	15	none	10.40	0.01	0.08	0.628	0.753	0.533	0.644
5/21/19	7:30	74	18	16	none	10.00	0.01	0.18	0.562	0.691	0.564	0.609
5/21/19	7:30	74	19	17	none	10.10	-0.44	0.10	0.859	0.577	0.564	0.680
5/21/19	7:30	74	20	18	none	10.02	0.07	0.10	0.455	0.402	0.522	0.462
5/21/19	7:30	74	21	19	none	10.02	0.12	0.10	0.413	0.555	0.393	0.460
5/21/19	7:30	74	22	20	none	10.30	-0.30	0.08	0.497	0.688	0.576	0.592

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	7:30	74	23	21	none	9.95	0.08	0.02	0.553	0.558	0.640	0.585
5/21/19	7:30	74	24	22	none	10.00	-0.05	-0.02	1.010	0.606	0.587	0.759
5/21/19	7:30	74	25	23	none	10.02	0.01	-0.05	0.523	0.778	0.507	0.615
5/21/19	7:30	74	26	24	none	10.10	-0.19	0.57	1.020	1.250	0.840	1.050
5/21/19	7:30	74	27	25	none	10.30	0.03	-0.02	0.691	0.575	0.877	0.725
5/21/19	7:30	74	28	13	none	10.02	-0.04	0.10	0.501	0.564	0.519	0.529
5/21/19	8:53	78	2	13	max	10.40	-0.01	0.02	0.767	0.535	0.641	0.655
5/21/19	8:53	78	3	1	max	10.02	0.13	0.16	1.170	1.240	0.727	1.070
5/21/19	8:53	78	4	2	max	10.30	-0.07	-0.10	0.927	0.777	0.692	0.804
5/21/19	8:53	78	5	3	max	10.02	0.31	0.14	0.941	1.320	0.785	1.040
5/21/19	8:53	78	6	4	max	10.02	0.02	0.03	1.260	1.370	0.834	1.180
5/21/19	8:53	78	7	5	max	10.40	-0.09	0.13	0.886	0.814	0.842	0.848
5/21/19	8:53	78	8	6	max	10.02	0.00	0.11	1.060	0.775	0.740	0.870
5/21/19	8:53	78	9	7	max	10.30	-0.08	-0.02	0.760	0.637	0.578	0.663
5/21/19	8:53	78	10	8	max	10.30	0.07	0.04	0.978	0.749	0.767	0.838
5/21/19	8:53	78	11	9	max	10.30	0.16	0.04	0.759	1.060	0.689	0.851
5/21/19	8:53	78	12	10	max	10.30	0.32	0.05	0.896	1.050	0.807	0.921
5/21/19	8:53	78	13	11	max	10.30	-0.05	0.07	0.832	0.836	0.607	0.766
5/21/19	8:53	78	14	12	max	10.30	-0.03	-0.04	0.921	0.564	0.826	0.785
5/21/19	8:53	78	15	13	max	10.30	-0.01	0.04	0.757	0.548	0.638	0.653
5/21/19	8:53	78	16	14	max	10.30	0.05	0.17	0.805	0.566	0.655	0.682
5/21/19	8:53	78	17	15	max	10.40	0.02	0.13	0.811	0.851	0.564	0.753
5/21/19	8:53	78	18	16	max	10.10	0.02	0.14	0.719	0.707	0.537	0.660
5/21/19	8:53	78	19	17	max	10.10	-0.03	0.14	1.000	1.030	0.832	0.958
5/21/19	8:53	78	20	18	max	10.30	0.05	0.03	0.695	0.639	0.668	0.668
5/21/19	8:53	78	21	19	max	10.30	0.10	0.11	0.711	0.604	0.479	0.605
5/21/19	8:53	78	22	20	max	10.30	-0.03	0.07	0.619	0.805	0.672	0.703
5/21/19	8:53	78	23	21	max	10.10	0.06	0.02	0.805	0.637	0.615	0.691

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	8:53	78	24	22	max	10.02	-0.04	-0.16	1.240	0.651	0.772	0.925
5/21/19	8:53	78	25	23	max	10.02	0.04	0.11	0.813	0.989	0.768	0.862
5/21/19	8:53	78	26	24	max	10.02	-0.06	0.43	0.820	0.849	0.907	0.859
5/21/19	8:53	78	27	25	max	10.40	-0.06	-0.14	0.847	0.891	0.895	0.878
5/21/19	8:53	78	28	13	max	10.30	0.00	0.03	0.828	0.542	0.639	0.680
5/21/19	9:42	79	2	13	none	10.30	-0.03	0.10	0.513	0.563	0.540	0.539
5/21/19	9:42	79	3	1	none	10.00	0.08	0.17	0.640	0.798	0.471	0.650
5/21/19	9:42	79	4	2	none	10.02	-0.12	-0.12	0.490	0.598	0.515	0.536
5/21/19	9:42	79	5	3	none	10.02	0.02	0.12	0.467	0.562	0.438	0.492
5/21/19	9:42	79	6	4	none	10.02	0.02	0.03	0.766	0.978	0.671	0.815
5/21/19	9:42	79	7	5	none	10.30	-0.14	0.04	0.558	0.609	0.673	0.615
5/21/19	9:42	79	8	6	none	10.10	-0.07	0.16	0.652	0.544	0.413	0.545
5/21/19	9:42	79	9	7	none	10.30	-0.07	0.05	0.383	0.347	0.412	0.381
5/21/19	9:42	79	10	8	none	10.02	0.15	0.10	0.457	0.400	0.413	0.424
5/21/19	9:42	79	11	9	none	10.30	0.12	0.05	0.558	0.570	0.404	0.516
5/21/19	9:42	79	12	10	none	10.30	0.03	0.13	0.485	0.676	0.480	0.555
5/21/19	9:42	79	13	11	none	10.02	-0.10	0.10	0.591	0.778	0.572	0.653
5/21/19	9:42	79	14	12	none	10.30	-0.03	0.01	0.593	0.573	0.719	0.632
5/21/19	9:42	79	15	13	none	10.30	-0.02	0.11	0.507	0.551	0.544	0.535
5/21/19	9:42	79	16	14	none	10.40	0.04	0.03	0.553	0.486	0.621	0.556
5/21/19	9:42	79	17	15	none	10.50	-0.02	0.08	0.616	0.754	0.544	0.644
5/21/19	9:42	79	18	16	none	10.10	0.02	0.02	0.529	0.651	0.477	0.557
5/21/19	9:42	79	19	17	none	10.02	-0.44	0.08	0.800	0.623	0.595	0.679
5/21/19	9:42	79	20	18	none	10.30	0.10	0.06	0.428	0.407	0.425	0.420
5/21/19	9:42	79	21	19	none	10.30	0.13	0.09	0.391	0.497	0.372	0.423
5/21/19	9:42	79	22	20	none	10.40	-0.03	0.13	0.496	0.702	0.692	0.637
5/21/19	9:42	79	23	21	none	10.00	0.08	0.02	0.551	0.559	0.655	0.590
5/21/19	9:42	79	24	22	none	10.10	-0.04	-0.02	1.010	0.590	0.577	0.753

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	9:42	79	25	23	none	10.02	0.03	0.01	0.548	1.060	0.887	0.858
5/21/19	9:42	79	26	24	none	10.10	-0.17	0.54	0.878	1.190	0.829	0.980
5/21/19	9:42	79	27	25	none	10.40	-0.02	-0.02	0.678	0.714	0.905	0.772
5/21/19	9:42	79	28	13	none	10.30	-0.03	0.11	0.501	0.556	0.526	0.528
5/21/19	10:20	80	2	13	max	10.40	-0.05	0.05	1.090	0.679	0.622	0.824
5/21/19	10:20	80	3	1	max	10.10	0.06	0.17	0.949	0.938	0.636	0.853
5/21/19	10:20	80	4	2	max	10.02	-0.04	-0.10	1.120	0.687	0.697	0.861
5/21/19	10:20	80	5	3	max	10.02	0.02	0.12	0.910	1.070	0.652	0.892
5/21/19	10:20	80	6	4	max	10.10	0.16	0.03	0.875	0.972	0.712	0.860
5/21/19	10:20	80	7	5	max	10.30	-0.05	0.09	0.658	0.701	0.638	0.666
5/21/19	10:20	80	8	6	max	10.02	-0.04	0.15	0.821	0.613	0.546	0.670
5/21/19	10:20	80	9	7	max	10.30	-0.04	0.04	0.657	0.567	0.478	0.572
5/21/19	10:20	80	10	8	max	10.30	0.05	0.10	0.864	0.526	0.648	0.694
5/21/19	10:20	80	11	9	max	10.30	0.05	0.04	0.818	0.739	0.721	0.760
5/21/19	10:20	80	12	10	max	10.02	0.34	0.03	0.765	1.150	0.641	0.878
5/21/19	10:20	80	13	11	max	10.10	-0.02	0.07	0.689	0.741	0.614	0.683
5/21/19	10:20	80	14	12	max	10.30	-0.07	-0.01	0.841	0.630	0.677	0.722
5/21/19	10:20	80	15	13	max	10.40	-0.06	0.07	0.895	0.631	0.624	0.728
5/21/19	10:20	80	16	14	max	10.30	-0.02	0.17	0.711	0.619	0.661	0.665
5/21/19	10:20	80	17	15	max	10.50	0.03	0.14	0.784	0.862	0.559	0.746
5/21/19	10:20	80	18	16	max	10.30	-0.01	0.15	0.942	0.935	0.571	0.834
5/21/19	10:20	80	19	17	max	10.30	-0.33	0.08	0.990	0.950	0.851	0.932
5/21/19	10:20	80	20	18	max	10.40	0.02	0.08	0.778	0.529	0.567	0.634
5/21/19	10:20	80	21	19	max	10.40	0.07	0.12	0.746	0.593	0.439	0.606
5/21/19	10:20	80	22	20	max	10.50	-0.02	0.10	0.902	0.965	0.717	0.868
5/21/19	10:20	80	23	21	max	10.30	0.03	0.02	1.020	0.760	0.640	0.821
5/21/19	10:20	80	24	22	max	10.40	-0.05	-0.16	1.280	0.771	0.872	0.998
5/21/19	10:20	80	25	23	max	10.30	-0.04	0.13	1.190	1.090	0.869	1.060

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	10:20	80	26	24	max	10.02	-0.13	0.48	1.200	1.150	0.877	1.080
5/21/19	10:20	80	27	25	max	10.50	-0.10	-0.11	1.120	1.010	1.090	1.070
5/21/19	10:20	80	28	13	max	10.30	-0.05	0.06	0.963	0.625	0.674	0.769
5/21/19	11:23	83	2	13	none	10.30	-0.09	0.10	0.494	0.596	0.519	0.538
5/21/19	11:23	83	3	1	none	9.98	0.11	0.17	0.765	0.934	0.629	0.786
5/21/19	11:23	83	4	2	none	10.10	-0.12	-0.09	0.547	0.810	0.573	0.654
5/21/19	11:23	83	5	3	none	10.10	0.02	0.13	0.506	0.702	0.481	0.572
5/21/19	11:23	83	6	4	none	10.10	0.19	0.03	0.867	1.110	0.786	0.930
5/21/19	11:23	83	7	5	none	10.30	-0.16	0.06	0.534	0.618	0.637	0.598
5/21/19	11:23	83	8	6	none	10.00	-0.08	0.16	0.709	0.546	0.415	0.569
5/21/19	11:23	83	9	7	none	10.02	-0.10	0.06	0.401	0.426	0.441	0.423
5/21/19	11:23	83	10	8	none	10.10	0.09	0.13	0.533	0.588	0.611	0.578
5/21/19	11:23	83	11	9	none	10.02	0.09	0.06	0.584	0.791	0.626	0.673
5/21/19	11:23	83	12	10	none	10.02	0.35	0.08	0.464	0.874	0.655	0.685
5/21/19	11:23	83	13	11	none	10.10	-0.05	0.08	0.604	0.799	0.629	0.683
5/21/19	11:23	83	14	12	none	10.02	-0.08	-0.01	0.607	0.579	0.780	0.661
5/21/19	11:23	83	15	13	none	10.02	-0.05	0.10	0.516	0.583	0.555	0.552
5/21/19	11:23	83	16	14	none	10.30	0.02	0.03	0.554	0.577	0.630	0.588
5/21/19	11:23	83	17	15	none	10.40	-0.02	0.09	0.626	0.794	0.557	0.667
5/21/19	11:23	83	18	16	none	10.00	-0.04	0.02	0.578	0.787	0.560	0.650
5/21/19	11:23	83	19	17	none	10.10	-0.50	0.09	0.739	0.634	0.602	0.661
5/21/19	11:23	83	20	18	none	10.02	0.06	0.11	0.444	0.539	0.538	0.509
5/21/19	11:23	83	21	19	none	10.02	0.10	0.12	0.484	0.690	0.471	0.558
5/21/19	11:23	83	22	20	none	10.30	-0.02	0.08	0.530	0.870	0.740	0.727
5/21/19	11:23	83	23	21	none	9.99	0.03	0.03	0.554	0.671	0.555	0.596
5/21/19	11:23	83	24	22	none	10.00	-0.07	-0.02	1.030	0.636	0.636	0.791
5/21/19	11:23	83	25	23	none	10.02	0.03	0.01	0.560	1.230	0.777	0.900
5/21/19	11:23	83	26	24	none	10.10	-0.19	0.57	0.992	1.320	0.887	1.080

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	11:23	83	27	25	none	10.40	-0.02	-0.02	0.706	0.715	0.989	0.814
5/21/19	11:23	83	28	13	none	10.02	-0.03	0.11	0.508	0.568	0.539	0.539
5/21/19	12:11	84	2	13	max	10.30	-0.06	0.05	0.768	0.641	0.626	0.681
5/21/19	12:11	84	3	1	max	10.00	0.04	0.15	1.010	0.960	0.625	0.880
5/21/19	12:11	84	4	2	max	10.02	-0.02	-0.10	0.829	0.576	0.600	0.678
5/21/19	12:11	84	5	3	max	10.02	0.02	0.14	0.715	0.769	0.548	0.684
5/21/19	12:11	84	6	4	max	10.10	0.12	0.03	0.715	0.680	0.645	0.681
5/21/19	12:11	84	7	5	max	10.30	-0.02	0.12	0.751	0.641	0.588	0.664
5/21/19	12:11	84	8	6	max	10.10	-0.05	0.15	0.845	0.620	0.511	0.673
5/21/19	12:11	84	9	7	max	10.02	-0.03	0.03	0.638	0.534	0.476	0.554
5/21/19	12:11	84	10	8	max	10.02	0.06	0.10	0.804	0.495	0.631	0.655
5/21/19	12:11	84	11	9	max	10.02	0.06	0.03	0.749	0.651	0.593	0.667
5/21/19	12:11	84	12	10	max	10.30	0.02	0.03	0.627	0.905	0.543	0.708
5/21/19	12:11	84	13	11	max	10.00	-0.02	0.06	1.070	0.732	0.606	0.825
5/21/19	12:11	84	14	12	max	10.02	-0.07	-0.01	0.898	0.646	0.680	0.750
5/21/19	12:11	84	15	13	max	10.30	-0.06	0.07	0.773	0.618	0.603	0.669
5/21/19	12:11	84	16	14	max	10.30	-0.01	0.13	0.712	0.595	0.615	0.643
5/21/19	12:11	84	17	15	max	10.30	0.07	0.15	0.799	0.904	0.568	0.770
5/21/19	12:11	84	18	16	max	10.02	-0.01	0.14	0.909	1.020	0.606	0.864
5/21/19	12:11	84	19	17	max	10.02	-0.35	0.08	0.973	1.060	0.885	0.974
5/21/19	12:11	84	20	18	max	10.30	0.00	0.09	0.705	0.634	0.595	0.646
5/21/19	12:11	84	21	19	max	10.30	0.05	0.12	0.829	0.670	0.490	0.677
5/21/19	12:11	84	22	20	max	10.30	-0.02	0.10	0.803	0.922	0.709	0.816
5/21/19	12:11	84	23	21	max	10.00	0.04	0.02	1.010	0.731	0.606	0.801
5/21/19	12:11	84	24	22	max	10.02	-0.05	-0.14	1.080	0.748	0.841	0.901
5/21/19	12:11	84	25	23	max	10.10	-0.04	0.12	0.961	0.985	0.848	0.933
5/21/19	12:11	84	26	24	max	10.10	-0.12	0.50	0.961	1.140	0.832	0.986
5/21/19	12:11	84	27	25	max	10.40	-0.08	-0.10	1.020	1.060	1.170	1.080

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	12:11	84	28	13	max	10.30	-0.04	0.05	0.740	0.624	0.632	0.667
5/21/19	13:55	85	2	13	none	10.30	-0.06	0.10	0.517	0.588	0.536	0.548
5/21/19	13:55	85	3	1	none	10.00	0.09	0.19	0.715	0.844	0.532	0.709
5/21/19	13:55	85	4	2	none	10.02	-0.15	-0.09	0.478	0.659	0.488	0.548
5/21/19	13:55	85	5	3	none	10.10	0.02	0.13	0.467	0.648	0.427	0.523
5/21/19	13:55	85	6	4	none	10.02	0.17	0.02	0.711	0.989	0.621	0.789
5/21/19	13:55	85	7	5	none	10.30	-0.12	0.09	0.536	0.663	0.659	0.622
5/21/19	13:55	85	8	6	none	10.00	-0.07	0.16	0.659	0.553	0.449	0.560
5/21/19	13:55	85	9	7	none	10.02	-0.10	0.06	0.379	0.398	0.425	0.401
5/21/19	13:55	85	10	8	none	10.02	0.12	0.13	0.445	0.437	0.440	0.441
5/21/19	13:55	85	11	9	none	10.30	0.10	0.06	0.543	0.576	0.460	0.529
5/21/19	13:55	85	12	10	none	10.30	0.36	0.10	0.450	0.568	0.510	0.512
5/21/19	13:55	85	13	11	none	10.02	-0.10	0.10	0.605	0.803	0.564	0.666
5/21/19	13:55	85	14	12	none	10.30	-0.06	0.01	0.600	0.581	0.736	0.643
5/21/19	13:55	85	15	13	none	10.30	-0.06	0.11	0.509	0.602	0.535	0.550
5/21/19	13:55	85	16	14	none	10.30	-0.04	0.02	0.526	0.570	0.561	0.553
5/21/19	13:55	85	17	15	none	10.50	0.03	0.10	0.652	0.782	0.543	0.666
5/21/19	13:55	85	18	16	none	10.10	0.00	0.16	0.566	0.851	0.542	0.668
5/21/19	13:55	85	19	17	none	10.10	-0.47	0.09	0.861	0.556	0.575	0.678
5/21/19	13:55	85	20	18	none	10.30	0.09	0.09	0.429	0.428	0.427	0.428
5/21/19	13:55	85	21	19	none	10.30	0.13	0.10	0.406	0.565	0.410	0.466
5/21/19	13:55	85	22	20	none	10.30	-0.03	0.12	0.516	0.695	0.619	0.614
5/21/19	13:55	85	23	21	none	10.00	0.07	0.02	0.556	0.568	0.621	0.582
5/21/19	13:55	85	24	22	none	10.10	-0.06	-0.02	1.030	0.632	0.629	0.787
5/21/19	13:55	85	25	23	none	10.02	-0.01	0.04	0.584	0.996	0.883	0.839
5/21/19	13:55	85	26	24	none	10.10	-0.16	0.59	0.892	1.230	0.729	0.971
5/21/19	13:55	85	27	25	none	10.40	-0.01	-0.02	0.696	0.642	0.933	0.767

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	13:55	85	28	13	none	10.30	-0.05	0.10	0.509	0.585	0.545	0.547
5/21/19	15:18	86	2	13	max	10.02	-0.06	0.06	0.634	0.609	0.578	0.607
5/21/19	15:18	86	3	1	max	9.97	0.04	0.15	0.894	0.940	0.589	0.823
5/21/19	15:18	86	4	2	max	10.10	-0.04	-0.12	0.634	0.603	0.566	0.602
5/21/19	15:18	86	5	3	max	10.10	0.02	0.13	0.702	0.900	0.603	0.745
5/21/19	15:18	86	6	4	max	10.10	0.11	0.03	0.621	0.674	0.626	0.641
5/21/19	15:18	86	7	5	max	10.30	-0.05	0.10	0.596	0.602	0.547	0.582
5/21/19	15:18	86	8	6	max	9.97	-0.05	0.15	0.732	0.587	0.499	0.614
5/21/19	15:18	86	9	7	max	10.10	-0.06	0.03	0.619	0.544	0.467	0.547
5/21/19	15:18	86	10	8	max	10.10	0.06	0.10	0.656	0.508	0.575	0.583
5/21/19	15:18	86	11	9	max	10.02	0.05	0.03	0.569	0.617	0.606	0.597
5/21/19	15:18	86	12	10	max	10.02	0.03	0.02	0.708	1.110	0.585	0.834
5/21/19	15:18	86	13	11	max	10.10	-0.05	0.05	0.672	0.758	0.592	0.677
5/21/19	15:18	86	14	12	max	10.02	-0.08	-0.01	0.634	0.631	0.635	0.633
5/21/19	15:18	86	15	13	max	10.02	-0.08	0.05	0.691	0.625	0.619	0.646
5/21/19	15:18	86	16	14	max	10.02	-0.04	0.17	0.692	0.621	0.593	0.637
5/21/19	15:18	86	17	15	max	10.30	0.04	0.12	0.730	0.843	0.544	0.716
5/21/19	15:18	86	18	16	max	9.94	-0.04	0.14	0.655	0.891	0.620	0.732
5/21/19	15:18	86	19	17	max	10.02	-0.36	0.05	0.935	0.889	0.784	0.872
5/21/19	15:18	86	20	18	max	10.30	0.02	0.07	0.716	0.539	0.567	0.612
5/21/19	15:18	86	21	19	max	10.02	0.08	0.11	0.750	0.619	0.457	0.620
5/21/19	15:18	86	22	20	max	10.30	-0.02	0.09	0.734	0.729	0.674	0.713
5/21/19	15:18	86	23	21	max	10.10	0.02	0.02	0.827	0.696	0.608	0.716
5/21/19	15:18	86	24	22	max	10.10	-0.06	-0.14	1.330	0.711	0.806	0.988
5/21/19	15:18	86	25	23	max	10.02	-0.06	0.12	0.803	0.885	0.763	0.818

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	15:18	86	26	24	max	10.00	-0.16	0.49	0.843	1.050	0.708	0.879
5/21/19	15:18	86	27	25	max	10.40	-0.12	-0.11	0.785	0.806	0.926	0.841
5/21/19	15:18	86	28	13	max	10.02	-0.07	0.06	0.835	0.623	0.605	0.695
5/21/19	15:55	87	2	13	max	10.02	-0.06	0.06	0.703	0.614	0.593	0.639
5/21/19	15:55	87	3	1	max	10.10	0.04	0.16	0.716	0.871	0.534	0.720
5/21/19	15:55	87	4	2	max	10.02	-0.02	-0.11	0.615	0.557	0.574	0.583
5/21/19	15:55	87	5	3	max	10.02	0.02	0.14	0.595	0.760	0.534	0.637
5/21/19	15:55	87	6	4	max	10.02	0.13	0.03	0.630	0.713	0.625	0.657
5/21/19	15:55	87	7	5	max	10.30	-0.04	0.11	0.637	0.575	0.534	0.584
5/21/19	15:55	87	8	6	max	10.10	-0.07	0.16	0.670	0.562	0.471	0.574
5/21/19	15:55	87	9	7	max	10.02	-0.04	0.03	0.495	0.499	0.459	0.485
5/21/19	15:55	87	10	8	max	10.02	0.07	0.11	0.644	0.485	0.615	0.586
5/21/19	15:55	87	11	9	max	10.30	0.05	0.02	0.577	0.624	0.548	0.584
5/21/19	15:55	87	12	10	max	10.02	0.03	0.03	0.554	0.890	0.541	0.681
5/21/19	15:55	87	13	11	max	10.02	-0.04	0.07	0.696	0.763	0.597	0.689
5/21/19	15:55	87	14	12	max	10.02	-0.08	0.00	0.685	0.629	0.648	0.655
5/21/19	15:55	87	15	13	max	10.30	-0.06	0.07	0.645	0.622	0.558	0.610
5/21/19	15:55	87	16	14	max	10.02	-0.02	0.16	0.642	0.604	0.595	0.614
5/21/19	15:55	87	17	15	max	10.30	0.05	0.14	0.669	0.823	0.546	0.689
5/21/19	15:55	87	18	16	max	10.10	-0.02	0.14	0.737	0.917	0.564	0.753
5/21/19	15:55	87	19	17	max	10.02	-0.38	0.06	1.000	0.885	0.803	0.901
5/21/19	15:55	87	20	18	max	10.30	0.03	0.08	0.593	0.475	0.538	0.537
5/21/19	15:55	87	21	19	max	10.30	0.06	0.12	0.595	0.549	0.446	0.534
5/21/19	15:55	87	22	20	max	10.30	-0.02	0.11	0.718	0.744	0.694	0.719
5/21/19	15:55	87	23	21	max	10.10	0.04	0.02	0.795	0.649	0.625	0.694
5/21/19	15:55	87	24	22	max	10.02	-0.06	-0.17	1.040	0.710	0.790	0.857
5/21/19	15:55	87	25	23	max	10.02	-0.05	0.13	0.702	0.878	0.764	0.785
5/21/19	15:55	87	26	24	max	10.10	-0.11	0.52	0.786	1.020	0.651	0.832

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/21/19	15:55	87	27	25	max	10.40	-0.09	-0.11	0.832	0.829	0.966	0.878
5/21/19	15:55	87	28	13	max	10.30	-0.06	0.07	0.614	0.613	0.570	0.599
5/22/19	8:02	88	2	13	none	10.30	-0.06	0.11	0.519	0.578	0.540	0.546
5/22/19	8:02	88	3	1	none	9.98	0.06	0.18	0.654	0.804	0.468	0.657
5/22/19	8:02	88	4	2	none	10.10	-0.14	-0.08	0.489	0.632	0.500	0.544
5/22/19	8:02	88	5	3	none	10.10	0.03	0.13	0.517	0.588	0.476	0.529
5/22/19	8:02	88	6	4	none	10.10	0.16	0.03	0.716	0.890	0.671	0.765
5/22/19	8:02	88	7	5	none	10.30	-0.16	0.04	0.553	0.594	0.674	0.609
5/22/19	8:02	88	8	6	none	10.00	-0.08	0.18	0.531	0.542	0.408	0.497
5/22/19	8:02	88	9	7	none	10.02	-0.09	0.04	0.376	0.357	0.426	0.387
5/22/19	8:02	88	10	8	none	10.10	0.13	0.11	0.434	0.380	0.424	0.413
5/22/19	8:02	88	11	9	none	10.30	0.09	0.08	0.559	0.547	0.373	0.500
5/22/19	8:02	88	12	10	none	10.02	0.02	0.17	0.511	0.725	0.460	0.577
5/22/19	8:02	88	13	11	none	10.10	-0.12	0.10	0.606	0.778	0.573	0.659
5/22/19	8:02	88	14	12	none	10.02	-0.07	0.01	0.595	0.569	0.731	0.636
5/22/19	8:02	88	15	13	none	10.02	-0.05	0.11	0.515	0.574	0.532	0.541
5/22/19	8:02	88	16	14	none	10.30	0.02	0.03	0.552	0.532	0.594	0.560
5/22/19	8:02	88	17	15	none	10.40	-0.03	0.09	0.624	0.772	0.531	0.650
5/22/19	8:02	88	18	16	none	10.00	-0.01	0.02	0.557	0.644	0.481	0.565
5/22/19	8:02	88	19	17	none	10.10	-0.47	0.11	0.822	0.516	0.522	0.636
5/22/19	8:02	88	20	18	none	10.02	0.09	0.09	0.450	0.383	0.399	0.412
5/22/19	8:02	88	21	19	none	10.02	0.08	0.12	0.421	0.497	0.394	0.439
5/22/19	8:02	88	22	20	none	10.30	-0.03	0.09	0.524	0.755	0.814	0.709
5/22/19	8:02	88	23	21	none	9.99	0.03	0.03	0.537	0.666	0.536	0.583
5/22/19	8:02	88	24	22	none	10.10	-0.06	-0.02	0.965	0.664	0.680	0.782
5/22/19	8:02	88	25	23	none	10.02	0.02	0.01	0.543	1.070	0.573	0.767
5/22/19	8:02	88	26	24	none	10.10	-0.02	0.54	0.913	1.280	0.819	1.020
5/22/19	8:02	88	27	25	none	10.40	-0.03	-0.19	0.704	0.744	0.950	0.807

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	8:02	88	28	13	none	10.02	-0.04	0.11	0.522	0.572	0.544	0.546
5/22/19	8:33	89	2	13	none	25.70	-0.07	-0.02	0.429	0.476	0.442	0.450
5/22/19	8:33	89	3	1	none	25.20	0.02	0.30	0.532	0.856	0.431	0.633
5/22/19	8:33	89	4	2	none	25.40	0.04	-0.30	0.346	0.335	0.483	0.394
5/22/19	8:33	89	5	3	none	25.50	0.53	-0.02	0.358	0.499	0.402	0.424
5/22/19	8:33	89	6	4	none	25.70	0.49	0.50	0.368	0.436	0.457	0.422
5/22/19	8:33	89	7	5	none	25.80	0.03	0.12	0.448	0.489	0.501	0.480
5/22/19	8:33	89	8	6	none	25.30	0.10	0.17	0.376	0.379	0.470	0.410
5/22/19	8:33	89	9	7	none	25.50	-0.14	-0.13	0.372	0.441	0.452	0.423
5/22/19	8:33	89	10	8	none	25.60	0.02	0.10	0.344	0.460	0.350	0.388
5/22/19	8:33	89	11	9	none	25.80	0.08	-0.05	0.393	0.494	0.409	0.434
5/22/19	8:33	89	12	10	none	25.90	0.67	-0.17	0.378	0.465	0.483	0.444
5/22/19	8:33	89	13	11	none	25.40	-0.06	0.02	0.460	0.619	0.475	0.523
5/22/19	8:33	89	14	12	none	25.60	-0.08	-0.15	0.407	0.462	0.453	0.441
5/22/19	8:33	89	15	13	none	25.70	-0.07	0.00	0.418	0.481	0.450	0.450
5/22/19	8:33	89	16	14	none	25.80	0.10	0.19	0.412	0.462	0.445	0.440
5/22/19	8:33	89	17	15	none	26.10	0.12	0.12	0.457	0.637	0.463	0.526
5/22/19	8:33	89	18	16	none	25.40	-0.02	0.19	0.399	0.526	0.383	0.441
5/22/19	8:33	89	19	17	none	25.50	-0.42	0.08	0.366	0.445	0.431	0.415
5/22/19	8:33	89	20	18	none	25.70	-0.06	0.03	0.375	0.509	0.365	0.422
5/22/19	8:33	89	21	19	none	25.80	0.04	0.08	0.363	0.386	0.417	0.389
5/22/19	8:33	89	22	20	none	25.90	-0.32	-0.10	0.335	0.456	0.406	0.402
5/22/19	8:33	89	23	21	none	25.40	0.14	0.03	0.386	0.542	0.439	0.460
5/22/19	8:33	89	24	22	none	25.50	0.00	-0.33	0.398	0.496	0.494	0.465
5/22/19	8:33	89	25	23	none	25.60	-0.10	0.02	0.368	0.402	0.465	0.413
5/22/19	8:33	89	26	24	none	25.70	-0.14	0.60	0.400	0.380	0.490	0.426
5/22/19	8:33	89	27	25	none	26.00	-0.10	-0.30	0.454	0.536	0.496	0.496
5/22/19	8:33	89	28	13	none	25.70	-0.02	-0.03	0.426	0.509	0.454	0.464

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	9:03	90	2	13	max	10.30	-0.06	0.05	0.830	0.640	0.645	0.710
5/22/19	9:03	90	3	1	max	10.10	0.06	0.16	0.950	0.963	0.613	0.858
5/22/19	9:03	90	4	2	max	10.02	-0.02	-0.10	0.909	0.644	0.612	0.734
5/22/19	9:03	90	5	3	max	10.02	0.02	0.14	0.853	0.862	0.582	0.776
5/22/19	9:03	90	6	4	max	10.10	0.13	0.03	0.799	0.763	0.673	0.747
5/22/19	9:03	90	7	5	max	10.30	-0.02	0.12	0.653	0.612	0.627	0.631
5/22/19	9:03	90	8	6	max	10.10	-0.04	0.16	0.826	0.629	0.550	0.678
5/22/19	9:03	90	9	7	max	10.02	-0.05	0.03	0.633	0.587	0.510	0.579
5/22/19	9:03	90	10	8	max	10.02	0.07	0.11	0.872	0.575	0.684	0.721
5/22/19	9:03	90	11	9	max	10.30	0.07	0.02	0.648	0.691	0.591	0.645
5/22/19	9:03	90	12	10	max	10.30	0.02	0.03	0.700	0.956	0.570	0.759
5/22/19	9:03	90	13	11	max	10.02	-0.03	0.05	0.952	0.815	0.643	0.813
5/22/19	9:03	90	14	12	max	10.30	-0.06	-0.02	0.741	0.620	0.672	0.679
5/22/19	9:03	90	15	13	max	10.30	-0.05	0.06	0.814	0.635	0.629	0.698
5/22/19	9:03	90	16	14	max	10.30	-0.01	0.15	0.878	0.616	0.658	0.726
5/22/19	9:03	90	17	15	max	10.40	0.04	0.15	0.877	0.960	0.562	0.818
5/22/19	9:03	90	18	16	max	10.02	-0.02	0.14	1.030	1.040	0.621	0.916
5/22/19	9:03	90	19	17	max	10.02	-0.35	0.08	1.040	1.150	0.934	1.050
5/22/19	9:03	90	20	18	max	10.30	0.02	0.08	0.835	0.619	0.673	0.715
5/22/19	9:03	90	21	19	max	10.30	0.05	0.12	0.866	0.674	0.501	0.696
5/22/19	9:03	90	22	20	max	10.40	-0.02	0.10	0.829	0.963	0.729	0.846
5/22/19	9:03	90	23	21	max	10.10	0.04	0.02	1.130	0.814	0.726	0.906
5/22/19	9:03	90	24	22	max	10.02	-0.06	-0.16	1.220	0.788	0.902	0.987
5/22/19	9:03	90	25	23	max	10.02	-0.04	0.12	0.937	1.030	0.858	0.945
5/22/19	9:03	90	26	24	max	10.10	-0.13	0.50	1.100	1.230	0.906	1.090
5/22/19	9:03	90	27	25	max	10.40	-0.07	-0.13	1.210	1.100	1.150	1.160
5/22/19	9:03	90	28	13	max	10.30	-0.04	0.06	0.782	0.614	0.630	0.679

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	9:32	91	2	13	max	25.70	-0.09	-0.06	0.470	0.502	0.511	0.494
5/22/19	9:32	91	3	1	max	25.20	0.17	0.02	0.516	0.766	0.472	0.599
5/22/19	9:32	91	4	2	max	25.40	0.07	-0.30	0.376	0.356	0.507	0.418
5/22/19	9:32	91	5	3	max	25.50	0.59	0.03	0.409	0.564	0.430	0.473
5/22/19	9:32	91	6	4	max	25.60	0.45	0.42	0.382	0.457	0.462	0.435
5/22/19	9:32	91	7	5	max	25.80	0.04	0.13	0.465	0.530	0.490	0.496
5/22/19	9:32	91	8	6	max	25.30	0.09	0.16	0.407	0.479	0.469	0.453
5/22/19	9:32	91	9	7	max	25.50	-0.06	-0.15	0.370	0.419	0.432	0.408
5/22/19	9:32	91	10	8	max	25.60	0.32	0.11	0.384	0.522	0.423	0.447
5/22/19	9:32	91	11	9	max	25.80	0.13	-0.07	0.413	0.537	0.429	0.463
5/22/19	9:32	91	12	10	max	25.90	0.49	-0.17	0.363	0.546	0.434	0.454
5/22/19	9:32	91	13	11	max	25.40	-0.02	0.03	0.511	0.652	0.490	0.556
5/22/19	9:32	91	14	12	max	25.60	-0.07	-0.18	0.474	0.462	0.528	0.489
5/22/19	9:32	91	15	13	max	25.70	-0.07	-0.03	0.475	0.506	0.502	0.495
5/22/19	9:32	91	16	14	max	25.80	0.09	0.08	0.430	0.464	0.469	0.455
5/22/19	9:32	91	17	15	max	26.00	0.08	0.05	0.462	0.645	0.450	0.526
5/22/19	9:32	91	18	16	max	25.40	-0.03	0.17	0.402	0.568	0.382	0.458
5/22/19	9:32	91	19	17	max	25.50	-0.42	0.07	0.438	0.591	0.478	0.507
5/22/19	9:32	91	20	18	max	25.70	-0.04	-0.04	0.399	0.434	0.419	0.418
5/22/19	9:32	91	21	19	max	25.80	0.04	0.10	0.390	0.430	0.420	0.413
5/22/19	9:32	91	22	20	max	25.90	-0.03	-0.06	0.378	0.508	0.422	0.439
5/22/19	9:32	91	23	21	max	25.40	0.08	0.03	0.447	0.482	0.466	0.465
5/22/19	9:32	91	24	22	max	25.50	0.00	-0.36	0.455	0.537	0.512	0.503
5/22/19	9:32	91	25	23	max	25.60	-0.13	0.02	0.387	0.435	0.442	0.422
5/22/19	9:32	91	26	24	max	25.70	-0.16	0.70	0.414	0.456	0.472	0.448
5/22/19	9:32	91	27	25	max	26.00	0.01	-0.03	0.495	0.617	0.515	0.545
5/22/19	9:32	91	28	13	max	25.70	-0.05	-0.04	0.470	0.496	0.516	0.494
5/22/19	10:03	92	2	13	none	10.30	-0.07	0.10	0.490	0.591	0.511	0.532

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	10:03	92	3	1	none	10.00	0.10	0.16	0.710	0.834	0.508	0.697
5/22/19	10:03	92	4	2	none	10.02	-0.15	-0.09	0.498	0.700	0.519	0.579
5/22/19	10:03	92	5	3	none	10.10	0.02	0.13	0.480	0.582	0.439	0.504
5/22/19	10:03	92	6	4	none	10.02	0.02	0.03	0.841	1.180	0.716	0.935
5/22/19	10:03	92	7	5	none	10.30	-0.17	0.06	0.524	0.562	0.654	0.582
5/22/19	10:03	92	8	6	none	10.00	-0.05	0.15	0.695	0.557	0.436	0.573
5/22/19	10:03	92	9	7	none	10.02	-0.09	0.06	0.371	0.361	0.406	0.380
5/22/19	10:03	92	10	8	none	10.02	0.13	0.12	0.441	0.421	0.425	0.429
5/22/19	10:03	92	11	9	none	10.30	0.08	0.05	0.552	0.561	0.441	0.521
5/22/19	10:03	92	12	10	none	10.30	0.02	0.15	0.495	0.727	0.456	0.572
5/22/19	10:03	92	13	11	none	10.02	-0.11	0.10	0.634	0.774	0.596	0.672
5/22/19	10:03	92	14	12	none	10.30	-0.06	0.01	0.594	0.576	0.730	0.637
5/22/19	10:03	92	15	13	none	10.30	-0.05	0.11	0.504	0.578	0.536	0.540
5/22/19	10:03	92	16	14	none	10.30	0.00	0.03	0.539	0.529	0.591	0.554
5/22/19	10:03	92	17	15	none	10.50	-0.02	0.08	0.599	0.752	0.530	0.634
5/22/19	10:03	92	18	16	none	10.10	0.00	0.02	0.542	0.631	0.481	0.555
5/22/19	10:03	92	19	17	none	10.02	-0.44	0.11	0.712	0.593	0.529	0.616
5/22/19	10:03	92	20	18	none	10.30	0.09	0.07	0.433	0.404	0.393	0.410
5/22/19	10:03	92	21	19	none	10.30	0.11	0.10	0.400	0.521	0.356	0.431
5/22/19	10:03	92	22	20	none	10.40	-0.03	0.08	0.459	0.625	0.545	0.547
5/22/19	10:03	92	23	21	none	10.00	0.07	0.02	0.524	0.546	0.582	0.551
5/22/19	10:03	92	24	22	none	10.10	-0.06	-0.02	0.994	0.574	0.589	0.745
5/22/19	10:03	92	25	23	none	10.02	0.00	-0.01	0.533	0.909	0.597	0.699
5/22/19	10:03	92	26	24	none	10.10	-0.16	0.57	0.892	1.150	0.744	0.944
5/22/19	10:03	92	27	25	none	10.40	0.03	-0.02	0.697	0.593	0.909	0.745
5/22/19	10:03	92	28	13	none	10.30	-0.05	0.10	0.511	0.579	0.538	0.543
5/22/19	10:29	93	2	13	max	10.30	-0.06	0.05	0.825	0.624	0.639	0.702
5/22/19	10:29	93	3	1	max	10.10	0.04	0.16	0.918	0.946	0.568	0.829

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	10:29	93	4	2	max	10.30	-0.02	-0.09	0.785	0.635	0.610	0.681
5/22/19	10:29	93	5	3	max	10.30	0.02	0.14	0.759	0.826	0.544	0.720
5/22/19	10:29	93	6	4	max	10.02	0.13	0.03	0.725	0.695	0.636	0.686
5/22/19	10:29	93	7	5	max	10.30	-0.03	0.13	0.695	0.605	0.607	0.637
5/22/19	10:29	93	8	6	max	10.10	-0.04	0.16	0.925	0.677	0.584	0.743
5/22/19	10:29	93	9	7	max	10.02	-0.05	0.03	0.744	0.548	0.504	0.608
5/22/19	10:29	93	10	8	max	10.02	0.06	0.11	0.868	0.600	0.737	0.743
5/22/19	10:29	93	11	9	max	10.30	0.06	0.03	0.686	0.694	0.613	0.665
5/22/19	10:29	93	12	10	max	10.30	0.02	0.03	0.679	0.976	0.596	0.768
5/22/19	10:29	93	13	11	max	10.02	-0.03	0.06	0.849	0.801	0.619	0.763
5/22/19	10:29	93	14	12	max	10.30	-0.07	-0.02	0.822	0.640	0.726	0.733
5/22/19	10:29	93	15	13	max	10.30	-0.06	0.05	0.801	0.629	0.639	0.694
5/22/19	10:29	93	16	14	max	10.30	-0.02	0.15	0.819	0.613	0.675	0.707
5/22/19	10:29	93	17	15	max	10.30	0.06	0.15	0.926	0.893	0.576	0.814
5/22/19	10:29	93	18	16	max	10.02	-0.01	0.14	0.972	1.060	0.619	0.904
5/22/19	10:29	93	19	17	max	10.02	-0.36	0.08	1.080	1.190	0.932	1.070
5/22/19	10:29	93	20	18	max	10.30	0.01	0.08	0.838	0.617	0.682	0.718
5/22/19	10:29	93	21	19	max	10.02	0.07	0.12	0.842	0.658	0.489	0.678
5/22/19	10:29	93	22	20	max	10.30	-0.02	0.10	0.963	0.978	0.740	0.900
5/22/19	10:29	93	23	21	max	10.00	0.04	0.02	1.230	0.818	0.696	0.942
5/22/19	10:29	93	24	22	max	10.02	-0.07	-0.15	1.190	0.815	0.905	0.981
5/22/19	10:29	93	25	23	max	10.02	-0.04	0.11	0.995	1.200	0.939	1.050
5/22/19	10:29	93	26	24	max	10.10	-0.12	0.50	1.050	1.230	0.906	1.070
5/22/19	10:29	93	27	25	max	10.40	-0.06	-0.13	1.010	1.090	1.140	1.080
5/22/19	10:29	93	28	13	max	10.30	-0.05	0.05	0.755	0.621	0.632	0.672
5/22/19	12:16	94	2	13	none	10.30	-0.06	0.08	0.511	0.596	0.535	0.548
5/22/19	12:16	94	3	1	none	10.00	0.08	0.18	0.705	0.868	0.516	0.711
5/22/19	12:16	94	4	2	none	10.02	-0.14	-0.09	0.499	0.686	0.523	0.576

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	12:16	94	5	3	none	10.02	0.19	0.12	0.460	0.544	0.427	0.480
5/22/19	12:16	94	6	4	none	10.02	0.18	0.03	0.815	1.070	0.677	0.869
5/22/19	12:16	94	7	5	none	10.30	-0.16	0.06	0.539	0.616	0.631	0.597
5/22/19	12:16	94	8	6	none	10.10	-0.06	0.17	0.457	0.538	0.381	0.463
5/22/19	12:16	94	9	7	none	10.02	-0.09	0.04	0.384	0.412	0.446	0.415
5/22/19	12:16	94	10	8	none	10.02	0.11	0.09	0.434	0.377	0.397	0.404
5/22/19	12:16	94	11	9	none	10.30	0.09	0.06	0.529	0.529	0.376	0.484
5/22/19	12:16	94	12	10	none	10.30	0.03	0.12	0.475	0.691	0.497	0.563
5/22/19	12:16	94	13	11	none	10.02	-0.11	0.11	0.596	0.748	0.580	0.646
5/22/19	12:16	94	14	12	none	10.30	-0.06	-0.01	0.608	0.575	0.764	0.654
5/22/19	12:16	94	15	13	none	10.30	-0.07	0.08	0.506	0.600	0.539	0.550
5/22/19	12:16	94	16	14	none	10.30	0.00	0.02	0.560	0.547	0.585	0.564
5/22/19	12:16	94	17	15	none	10.50	-0.01	0.07	0.618	0.764	0.563	0.654
5/22/19	12:16	94	18	16	none	10.10	0.02	0.19	0.525	0.628	0.518	0.559
5/22/19	12:16	94	19	17	none	10.10	-0.48	0.10	0.837	0.551	0.538	0.657
5/22/19	12:16	94	20	18	none	10.30	0.08	0.08	0.434	0.517	0.464	0.473
5/22/19	12:16	94	21	19	none	10.30	0.11	0.11	0.410	0.568	0.398	0.465
5/22/19	12:16	94	22	20	none	10.40	-0.30	0.07	0.510	0.662	0.579	0.587
5/22/19	12:16	94	23	21	none	10.00	0.08	0.02	0.564	0.582	0.602	0.583
5/22/19	12:16	94	24	22	none	10.10	-0.11	-0.02	0.988	0.678	0.660	0.790
5/22/19	12:16	94	25	23	none	10.02	-0.06	0.06	0.584	0.867	0.807	0.762
5/22/19	12:16	94	26	24	none	10.10	-0.19	0.56	0.846	1.200	0.766	0.957
5/22/19	12:16	94	27	25	none	10.40	0.01	-0.02	0.708	0.682	0.883	0.763
5/22/19	12:16	94	28	13	none	10.30	-0.05	0.09	0.512	0.582	0.539	0.545
5/22/19	13:52	97	2	13	max	10.30	-0.08	0.07	0.585	0.598	0.548	0.577
5/22/19	13:52	97	3	1	max	10.10	0.04	0.17	0.753	0.926	0.549	0.759
5/22/19	13:52	97	4	2	max	10.30	-0.05	-0.08	0.621	0.681	0.560	0.622
5/22/19	13:52	97	5	3	max	10.02	0.02	0.13	0.637	0.858	0.562	0.697

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	13:52	97	6	4	max	10.02	0.15	0.03	0.704	0.894	0.653	0.757
5/22/19	13:52	97	7	5	max	10.30	-0.10	0.11	0.638	0.648	0.620	0.636
5/22/19	13:52	97	8	6	max	10.10	-0.04	0.17	0.680	0.558	0.466	0.575
5/22/19	13:52	97	9	7	max	10.02	-0.07	0.02	0.498	0.477	0.461	0.479
5/22/19	13:52	97	10	8	max	10.02	0.08	0.11	0.559	0.519	0.605	0.562
5/22/19	13:52	97	11	9	max	10.30	0.03	-0.01	0.559	0.655	0.562	0.594
5/22/19	13:52	97	12	10	max	10.30	0.34	0.03	0.568	0.944	0.600	0.724
5/22/19	13:52	97	13	11	max	10.02	-0.04	0.07	0.716	0.772	0.610	0.703
5/22/19	13:52	97	14	12	max	10.30	-0.09	-0.02	0.680	0.593	0.683	0.654
5/22/19	13:52	97	15	13	max	10.30	-0.08	0.08	0.563	0.590	0.528	0.561
5/22/19	13:52	97	16	14	max	10.30	-0.04	0.02	0.586	0.603	0.597	0.596
5/22/19	13:52	97	17	15	max	10.40	0.06	0.12	0.722	0.835	0.554	0.713
5/22/19	13:52	97	18	16	max	10.02	0.00	0.14	0.735	0.862	0.581	0.735
5/22/19	13:52	97	19	17	max	10.30	-0.41	0.07	0.742	0.784	0.710	0.746
5/22/19	13:52	97	20	18	max	10.40	0.03	0.08	0.609	0.519	0.543	0.559
5/22/19	13:52	97	21	19	max	10.40	0.07	0.11	0.620	0.565	0.438	0.546
5/22/19	13:52	97	22	20	max	10.40	-0.02	0.10	0.669	0.711	0.693	0.691
5/22/19	13:52	97	23	21	max	10.10	0.05	0.02	0.725	0.672	0.648	0.682
5/22/19	13:52	97	24	22	max	10.30	-0.07	-0.18	0.894	0.690	0.749	0.782
5/22/19	13:52	97	25	23	max	10.30	-0.04	0.10	0.653	0.908	0.854	0.812
5/22/19	13:52	97	26	24	max	10.02	-0.14	0.52	0.850	1.220	0.744	0.958
5/22/19	13:52	97	27	25	max	10.50	-0.06	-0.13	0.778	0.839	0.922	0.849
5/22/19	13:52	97	28	13	max	10.30	-0.07	0.07	0.568	0.588	0.552	0.569
5/22/19	14:51	99	2	13	max	10.30	-0.08	0.06	0.604	0.590	0.545	0.580
5/22/19	14:51	99	3	1	max	10.10	0.08	0.15	0.892	1.010	0.608	0.854
5/22/19	14:51	99	4	2	max	10.02	-0.07	-0.08	0.582	0.706	0.584	0.627
5/22/19	14:51	99	5	3	max	10.02	0.03	0.15	0.701	0.959	0.681	0.791
5/22/19	14:51	99	6	4	max	10.02	0.02	0.03	0.873	1.220	0.761	0.972

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	14:51	99	7	5	max	10.40	-0.10	0.10	0.541	0.618	0.584	0.582
5/22/19	14:51	99	8	6	max	10.10	-0.04	0.16	0.741	0.574	0.490	0.611
5/22/19	14:51	99	9	7	max	10.30	-0.06	0.02	0.506	0.511	0.471	0.496
5/22/19	14:51	99	10	8	max	10.30	0.07	0.10	0.602	0.482	0.609	0.567
5/22/19	14:51	99	11	9	max	10.40	0.04	-0.01	0.585	0.626	0.529	0.581
5/22/19	14:51	99	12	10	max	10.30	0.32	0.03	0.572	0.947	0.568	0.718
5/22/19	14:51	99	13	11	max	10.02	-0.04	0.07	0.770	0.787	0.609	0.727
5/22/19	14:51	99	14	12	max	10.30	-0.09	-0.02	0.655	0.606	0.663	0.642
5/22/19	14:51	99	15	13	max	10.30	-0.09	0.08	0.618	0.608	0.554	0.594
5/22/19	14:51	99	16	14	max	10.30	-0.04	0.18	0.632	0.601	0.614	0.616
5/22/19	14:51	99	17	15	max	10.40	0.07	0.11	0.692	0.814	0.538	0.690
5/22/19	14:51	99	18	16	max	10.02	-0.02	0.14	0.806	0.893	0.581	0.771
5/22/19	14:51	99	19	17	max	10.30	-0.42	0.07	0.765	0.740	0.680	0.729
5/22/19	14:51	99	20	18	max	10.40	0.03	0.09	0.615	0.508	0.507	0.546
5/22/19	14:51	99	21	19	max	10.30	0.08	0.10	0.563	0.550	0.424	0.516
5/22/19	14:51	99	22	20	max	10.40	-0.02	0.11	0.677	0.698	0.688	0.688
5/22/19	14:51	99	23	21	max	10.10	0.05	0.02	0.797	0.670	0.648	0.708
5/22/19	14:51	99	24	22	max	10.30	-0.07	-0.18	0.965	0.689	0.746	0.809
5/22/19	14:51	99	25	23	max	10.30	-0.03	0.09	0.731	0.958	0.871	0.858
5/22/19	14:51	99	26	24	max	10.02	-0.15	0.52	0.883	1.170	0.734	0.947
5/22/19	14:51	99	27	25	max	10.50	-0.07	-0.14	0.810	0.835	0.985	0.880
5/22/19	14:51	99	28	13	max	10.30	-0.07	0.07	0.597	0.585	0.528	0.571
5/22/19	15:19	100	2	13	none	25.70	-0.09	-0.07	0.427	0.510	0.446	0.462
5/22/19	15:19	100	3	1	none	25.20	0.03	0.03	0.462	0.751	0.419	0.564
5/22/19	15:19	100	4	2	none	25.40	0.02	-0.33	0.336	0.325	0.475	0.385
5/22/19	15:19	100	5	3	none	25.60	0.51	-0.02	0.357	0.517	0.389	0.426
5/22/19	15:19	100	6	4	none	25.70	0.41	0.45	0.353	0.414	0.460	0.412
5/22/19	15:19	100	7	5	none	25.90	0.00	0.09	0.442	0.502	0.478	0.475

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	15:19	100	8	6	none	25.30	0.10	0.13	0.370	0.413	0.454	0.414
5/22/19	15:19	100	9	7	none	25.50	-0.16	-0.15	0.343	0.406	0.417	0.390
5/22/19	15:19	100	10	8	none	25.60	0.02	0.09	0.337	0.467	0.355	0.391
5/22/19	15:19	100	11	9	none	25.80	0.07	-0.08	0.404	0.513	0.424	0.449
5/22/19	15:19	100	12	10	none	25.90	0.65	-0.02	0.368	0.475	0.490	0.448
5/22/19	15:19	100	13	11	none	25.40	-0.07	0.01	0.461	0.594	0.507	0.523
5/22/19	15:19	100	14	12	none	25.60	-0.12	-0.02	0.414	0.441	0.499	0.453
5/22/19	15:19	100	15	13	none	25.70	-0.06	-0.06	0.431	0.494	0.446	0.458
5/22/19	15:19	100	16	14	none	25.90	0.08	0.15	0.406	0.451	0.442	0.434
5/22/19	15:19	100	17	15	none	26.10	0.12	0.09	0.453	0.647	0.453	0.526
5/22/19	15:19	100	18	16	none	25.40	0.03	0.18	0.376	0.500	0.355	0.415
5/22/19	15:19	100	19	17	none	25.50	-0.40	0.05	0.361	0.436	0.429	0.410
5/22/19	15:19	100	20	18	none	25.80	-0.03	-0.01	0.347	0.438	0.366	0.386
5/22/19	15:19	100	21	19	none	25.80	0.01	0.01	0.333	0.394	0.383	0.371
5/22/19	15:19	100	22	20	none	26.00	-0.36	-0.17	0.318	0.455	0.366	0.384
5/22/19	15:19	100	23	21	none	25.40	0.07	0.02	0.368	0.481	0.451	0.436
5/22/19	15:19	100	24	22	none	25.50	0.02	-0.38	0.395	0.464	0.521	0.463
5/22/19	15:19	100	25	23	none	25.70	-0.11	0.17	0.377	0.398	0.471	0.417
5/22/19	15:19	100	26	24	none	25.70	-0.18	0.55	0.383	0.381	0.491	0.421
5/22/19	15:19	100	27	25	none	26.00	-0.07	-0.31	0.434	0.520	0.441	0.466
5/22/19	15:19	100	28	13	none	25.70	-0.01	-0.05	0.431	0.513	0.453	0.467
5/22/19	15:46	101	2	13	max	25.70	-0.07	-0.07	0.446	0.507	0.488	0.481
5/22/19	15:46	101	3	1	max	25.20	0.19	0.02	0.454	0.734	0.448	0.562
5/22/19	15:46	101	4	2	max	25.40	0.03	-0.32	0.357	0.338	0.495	0.403
5/22/19	15:46	101	5	3	max	25.60	0.55	0.01	0.371	0.538	0.405	0.444
5/22/19	15:46	101	6	4	max	25.70	0.42	0.42	0.371	0.443	0.459	0.426
5/22/19	15:46	101	7	5	max	25.90	0.04	0.08	0.451	0.514	0.495	0.487
5/22/19	15:46	101	8	6	max	25.30	0.11	0.14	0.372	0.484	0.459	0.441

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	15:46	101	9	7	max	25.50	-0.12	-0.13	0.335	0.395	0.410	0.382
5/22/19	15:46	101	10	8	max	25.60	0.03	0.11	0.358	0.517	0.390	0.427
5/22/19	15:46	101	11	9	max	25.80	0.10	-0.10	0.404	0.507	0.433	0.450
5/22/19	15:46	101	12	10	max	25.90	0.59	-0.02	0.360	0.511	0.458	0.447
5/22/19	15:46	101	13	11	max	25.40	-0.02	0.01	0.474	0.620	0.491	0.532
5/22/19	15:46	101	14	12	max	25.50	-0.09	-0.34	0.434	0.436	0.528	0.468
5/22/19	15:46	101	15	13	max	25.70	-0.07	-0.07	0.443	0.511	0.482	0.480
5/22/19	15:46	101	16	14	max	25.80	0.10	0.09	0.409	0.452	0.461	0.441
5/22/19	15:46	101	17	15	max	26.10	0.08	0.03	0.450	0.649	0.457	0.527
5/22/19	15:46	101	18	16	max	25.40	0.02	0.17	0.377	0.553	0.377	0.443
5/22/19	15:46	101	19	17	max	25.50	-0.40	0.02	0.378	0.506	0.432	0.442
5/22/19	15:46	101	20	18	max	25.70	-0.02	-0.06	0.356	0.414	0.406	0.393
5/22/19	15:46	101	21	19	max	25.80	0.04	0.04	0.352	0.428	0.398	0.394
5/22/19	15:46	101	22	20	max	25.90	-0.30	-0.13	0.351	0.498	0.415	0.425
5/22/19	15:46	101	23	21	max	25.40	0.08	0.03	0.377	0.476	0.463	0.441
5/22/19	15:46	101	24	22	max	25.50	0.01	-0.40	0.406	0.489	0.512	0.471
5/22/19	15:46	101	25	23	max	25.60	-0.14	0.02	0.377	0.422	0.451	0.418
5/22/19	15:46	101	26	24	max	25.70	-0.17	0.64	0.381	0.423	0.485	0.431
5/22/19	15:46	101	27	25	max	26.00	-0.06	-0.30	0.462	0.584	0.486	0.513
5/22/19	15:46	101	28	13	max	25.70	-0.04	-0.04	0.446	0.512	0.488	0.483
5/22/19	16:12	102	2	13	max	51.40	-0.02	-0.02	0.334	0.422	0.348	0.370
5/22/19	16:12	102	3	1	max	50.30	0.42	0.42	0.536	0.897	0.484	0.665
5/22/19	16:12	102	4	2	max	50.70	0.03	-0.45	0.367	0.490	0.406	0.424
5/22/19	16:12	102	5	3	max	51.10	1.21	-0.03	0.384	0.440	0.452	0.426
5/22/19	16:12	102	6	4	max	51.30	1.10	0.34	0.317	0.360	0.373	0.351
5/22/19	16:12	102	7	5	max	51.70	0.60	-0.16	0.400	0.414	0.495	0.438
5/22/19	16:12	102	8	6	max	50.50	0.08	0.09	0.401	0.532	0.433	0.459
5/22/19	16:12	102	9	7	max	51.00	0.00	-0.46	0.303	0.372	0.329	0.336

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/22/19	16:12	102	10	8	max	51.30	0.59	-0.05	0.303	0.454	0.321	0.366
5/22/19	16:12	102	11	9	max	51.60	0.82	-0.43	0.330	0.433	0.365	0.378
5/22/19	16:12	102	12	10	max	52.00	0.52	-0.52	0.030	0.361	0.349	0.337
5/22/19	16:12	102	13	11	max	50.60	0.01	0.10	0.349	0.468	0.369	0.399
5/22/19	16:12	102	14	12	max	51.20	0.01	-0.03	0.318	0.371	0.334	0.342
5/22/19	16:12	102	15	13	max	51.50	0.09	-0.02	0.330	0.412	0.344	0.364
5/22/19	16:12	102	16	14	max	51.70	0.18	-0.53	0.335	0.426	0.377	0.381
5/22/19	16:12	102	17	15	max	52.20	0.02	-0.03	0.356	0.476	0.345	0.397
5/22/19	16:12	102	18	16	max	50.70	0.14	0.36	0.362	0.534	0.375	0.431
5/22/19	16:12	102	19	17	max	51.10	-0.39	0.02	0.327	0.428	0.414	0.392
5/22/19	16:12	102	20	18	max	51.50	-0.18	-0.02	0.028	0.342	0.300	0.308
5/22/19	16:12	102	21	19	max	51.70	-0.09	-0.14	0.029	0.334	0.317	0.314
5/22/19	16:12	102	22	20	max	52.10	-0.01	-0.07	0.314	0.385	0.347	0.350
5/22/19	16:12	102	23	21	max	50.70	0.03	0.36	0.350	0.584	0.369	0.447
5/22/19	16:12	102	24	22	max	51.10	-0.12	-0.66	0.316	0.460	0.339	0.377
5/22/19	16:12	102	25	23	max	51.30	-0.02	0.10	0.336	0.413	0.396	0.383
5/22/19	16:12	102	26	24	max	51.50	-0.12	0.92	0.362	0.458	0.385	0.404
5/22/19	16:12	102	27	25	max	51.90	-0.12	-0.02	0.448	0.530	0.546	0.510
5/22/19	16:12	102	28	13	max	51.50	0.15	-0.02	0.328	0.415	0.345	0.364
5/23/19	9:01	106	2	13	max	51.40	0.09	-0.18	0.333	0.424	0.345	0.369
5/23/19	9:01	106	3	1	max	50.02	0.53	0.44	0.581	0.973	0.508	0.717
5/23/19	9:01	106	4	2	max	50.70	0.43	-0.36	0.350	0.480	0.384	0.409
5/23/19	9:01	106	5	3	max	51.00	1.35	-0.02	0.405	0.456	0.491	0.452
5/23/19	9:01	106	6	4	max	51.20	1.21	0.41	0.329	0.388	0.393	0.371
5/23/19	9:01	106	7	5	max	51.60	0.67	-0.06	0.415	0.447	0.499	0.455
5/23/19	9:01	106	8	6	max	50.40	0.17	0.18	0.419	0.564	0.465	0.487
5/23/19	9:01	106	9	7	max	50.90	0.12	-0.35	0.314	0.380	0.332	0.343
5/23/19	9:01	106	10	8	max	51.20	0.80	0.04	0.305	0.464	0.327	0.372

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	9:01	106	11	9	max	51.50	0.87	-0.31	0.337	0.433	0.373	0.383
5/23/19	9:01	106	12	10	max	51.80	0.56	-0.39	0.030	0.370	0.345	0.339
5/23/19	9:01	106	13	11	max	50.50	0.11	0.18	0.348	0.489	0.371	0.407
5/23/19	9:01	106	14	12	max	51.10	0.09	-0.02	0.316	0.386	0.326	0.344
5/23/19	9:01	106	15	13	max	51.40	0.19	-0.15	0.334	0.424	0.349	0.371
5/23/19	9:01	106	16	14	max	51.50	0.03	-0.46	0.336	0.432	0.380	0.385
5/23/19	9:01	106	17	15	max	52.00	0.03	-0.16	0.348	0.477	0.344	0.395
5/23/19	9:01	106	18	16	max	50.50	0.08	0.43	0.373	0.558	0.394	0.449
5/23/19	9:01	106	19	17	max	50.90	-0.37	0.11	0.334	0.456	0.446	0.416
5/23/19	9:01	106	20	18	max	51.30	-0.10	-0.13	0.028	0.363	0.029	0.314
5/23/19	9:01	106	21	19	max	51.50	0.02	-0.03	0.029	0.335	0.316	0.313
5/23/19	9:01	106	22	20	max	51.90	0.06	0.02	0.325	0.405	0.346	0.360
5/23/19	9:01	106	23	21	max	50.50	0.35	0.41	0.360	0.595	0.376	0.457
5/23/19	9:01	106	24	22	max	50.90	-0.09	-0.67	0.328	0.478	0.346	0.390
5/23/19	9:01	106	25	23	max	51.10	-0.12	0.17	0.367	0.424	0.414	0.403
5/23/19	9:01	106	26	24	max	51.30	0.00	0.99	0.359	0.468	0.388	0.408
5/23/19	9:01	106	27	25	max	51.70	-0.05	-0.11	0.449	0.538	0.535	0.509
5/23/19	9:01	106	28	13	max	51.30	0.02	-0.14	0.333	0.425	0.348	0.371
5/23/19	9:35	107	2	13	none	51.40	0.14	-0.18	0.321	0.387	0.322	0.345
5/23/19	9:35	107	3	1	none	50.30	0.62	0.47	0.576	0.958	0.486	0.704
5/23/19	9:35	107	4	2	none	50.70	0.47	-0.38	0.358	0.480	0.385	0.411
5/23/19	9:35	107	5	3	none	51.00	1.30	-0.03	0.396	0.449	0.467	0.438
5/23/19	9:35	107	6	4	none	51.20	1.19	0.40	0.334	0.406	0.392	0.379
5/23/19	9:35	107	7	5	none	51.60	0.73	-0.12	0.425	0.437	0.485	0.450
5/23/19	9:35	107	8	6	none	50.50	0.17	0.19	0.410	0.505	0.443	0.454
5/23/19	9:35	107	9	7	none	51.00	0.11	-0.34	0.029	0.344	0.312	0.317
5/23/19	9:35	107	10	8	none	51.20	0.67	0.01	0.318	0.440	0.333	0.368
5/23/19	9:35	107	11	9	none	51.50	0.89	-0.31	0.352	0.434	0.371	0.388

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	9:35	107	12	10	none	51.90	0.82	-0.51	0.029	0.360	0.324	0.326
5/23/19	9:35	107	13	11	none	50.50	0.10	0.19	0.341	0.436	0.351	0.378
5/23/19	9:35	107	14	12	none	51.00	0.02	-0.02	0.311	0.378	0.321	0.338
5/23/19	9:35	107	15	13	none	51.40	0.15	-0.15	0.325	0.423	0.337	0.364
5/23/19	9:35	107	16	14	none	51.60	0.02	-0.46	0.329	0.422	0.359	0.372
5/23/19	9:35	107	17	15	none	52.10	0.34	-0.16	0.351	0.465	0.344	0.391
5/23/19	9:35	107	18	16	none	50.50	0.10	0.41	0.403	0.546	0.394	0.453
5/23/19	9:35	107	19	17	none	50.90	-0.40	0.03	0.347	0.444	0.426	0.408
5/23/19	9:35	107	20	18	none	51.30	-0.16	-0.13	0.028	0.361	0.028	0.311
5/23/19	9:35	107	21	19	none	51.50	-0.01	0.00	0.028	0.327	0.300	0.304
5/23/19	9:35	107	22	20	none	51.90	0.10	0.01	0.303	0.365	0.306	0.326
5/23/19	9:35	107	23	21	none	50.50	0.34	0.39	0.355	0.577	0.367	0.445
5/23/19	9:35	107	24	22	none	50.90	-0.15	-0.64	0.340	0.489	0.365	0.403
5/23/19	9:35	107	25	23	none	51.10	-0.02	0.15	0.349	0.418	0.409	0.393
5/23/19	9:35	107	26	24	none	51.30	-0.01	0.96	0.362	0.456	0.399	0.408
5/23/19	9:35	107	27	25	none	51.70	-0.05	-0.13	0.451	0.531	0.531	0.506
5/23/19	9:35	107	28	13	none	51.30	0.02	-0.15	0.323	0.389	0.332	0.349
5/23/19	10:11	109	2	13	max	25.70	-0.02	-0.03	0.440	0.509	0.480	0.477
5/23/19	10:11	109	3	1	max	25.20	0.03	0.03	0.479	0.793	0.458	0.597
5/23/19	10:11	109	4	2	max	25.40	0.09	-0.32	0.358	0.348	0.496	0.406
5/23/19	10:11	109	5	3	max	25.50	0.62	0.01	0.369	0.544	0.415	0.449
5/23/19	10:11	109	6	4	max	25.60	0.46	0.42	0.358	0.435	0.455	0.418
5/23/19	10:11	109	7	5	max	25.80	0.08	0.12	0.444	0.521	0.486	0.485
5/23/19	10:11	109	8	6	max	25.30	0.17	0.15	0.376	0.443	0.479	0.435
5/23/19	10:11	109	9	7	max	25.50	-0.07	-0.11	0.344	0.414	0.417	0.393
5/23/19	10:11	109	10	8	max	25.60	0.34	0.13	0.351	0.483	0.407	0.417
5/23/19	10:11	109	11	9	max	25.80	0.13	-0.11	0.400	0.500	0.434	0.447
5/23/19	10:11	109	12	10	max	25.90	0.63	-0.19	0.359	0.505	0.446	0.441

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	10:11	109	13	11	max	25.30	0.02	0.03	0.467	0.644	0.482	0.537
5/23/19	10:11	109	14	12	max	25.50	-0.05	-0.30	0.437	0.449	0.525	0.472
5/23/19	10:11	109	15	13	max	25.70	-0.03	-0.03	0.444	0.512	0.486	0.481
5/23/19	10:11	109	16	14	max	25.80	0.12	0.09	0.412	0.453	0.466	0.444
5/23/19	10:11	109	17	15	max	26.00	0.15	0.05	0.448	0.654	0.455	0.528
5/23/19	10:11	109	18	16	max	25.30	0.01	0.18	0.386	0.572	0.386	0.457
5/23/19	10:11	109	19	17	max	25.50	-0.38	0.06	0.370	0.519	0.431	0.444
5/23/19	10:11	109	20	18	max	25.70	0.00	-0.05	0.350	0.426	0.405	0.395
5/23/19	10:11	109	21	19	max	25.80	0.07	0.09	0.359	0.426	0.422	0.404
5/23/19	10:11	109	22	20	max	25.90	-0.03	-0.10	0.350	0.472	0.414	0.415
5/23/19	10:11	109	23	21	max	25.30	0.10	0.03	0.375	0.481	0.455	0.439
5/23/19	10:11	109	24	22	max	25.50	0.03	-0.40	0.408	0.501	0.501	0.472
5/23/19	10:11	109	25	23	max	25.60	-0.10	0.02	0.362	0.429	0.428	0.408
5/23/19	10:11	109	26	24	max	25.70	-0.11	0.66	0.376	0.430	0.457	0.423
5/23/19	10:11	109	27	25	max	26.00	0.02	-0.03	0.474	0.591	0.491	0.521
5/23/19	10:11	109	28	13	max	25.70	0.00	-0.01	0.446	0.516	0.484	0.483
5/23/19	10:40	110	2	13	max	10.30	-0.04	0.07	0.610	0.580	0.558	0.583
5/23/19	10:40	110	3	1	max	10.00	0.07	0.16	0.767	0.940	0.567	0.773
5/23/19	10:40	110	4	2	max	10.10	-0.06	-0.11	0.693	0.774	0.595	0.691
5/23/19	10:40	110	5	3	max	10.10	0.03	0.14	0.680	0.878	0.637	0.739
5/23/19	10:40	110	6	4	max	10.10	0.16	0.02	0.691	0.867	0.663	0.746
5/23/19	10:40	110	7	5	max	10.02	-0.04	0.09	0.610	0.650	0.606	0.622
5/23/19	10:40	110	8	6	max	10.00	0.00	0.17	0.553	0.544	0.475	0.525
5/23/19	10:40	110	9	7	max	10.02	-0.06	0.02	0.472	0.470	0.471	0.471
5/23/19	10:40	110	10	8	max	10.10	0.09	0.12	0.607	0.545	0.625	0.593
5/23/19	10:40	110	11	9	max	10.02	0.06	-0.02	0.627	0.683	0.546	0.621
5/23/19	10:40	110	12	10	max	10.02	0.33	0.02	0.522	0.902	0.557	0.682
5/23/19	10:40	110	13	11	max	10.10	-0.02	0.07	0.687	0.781	0.624	0.700

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	10:40	110	14	12	max	10.02	-0.06	-0.04	0.621	0.589	0.689	0.635
5/23/19	10:40	110	15	13	max	10.30	-0.05	0.07	0.595	0.585	0.556	0.579
5/23/19	10:40	110	16	14	max	10.30	-0.01	0.16	0.578	0.575	0.599	0.584
5/23/19	10:40	110	17	15	max	10.40	0.08	0.12	0.723	0.830	0.535	0.707
5/23/19	10:40	110	18	16	max	10.10	-0.01	0.14	0.752	0.887	0.613	0.759
5/23/19	10:40	110	19	17	max	10.02	-0.38	0.05	0.950	0.838	0.770	0.856
5/23/19	10:40	110	20	18	max	10.30	0.06	0.07	0.563	0.527	0.567	0.553
5/23/19	10:40	110	21	19	max	10.02	0.10	0.10	0.601	0.577	0.441	0.544
5/23/19	10:40	110	22	20	max	10.30	-0.02	0.10	0.605	0.706	0.710	0.676
5/23/19	10:40	110	23	21	max	9.99	0.06	0.02	0.711	0.691	0.622	0.676
5/23/19	10:40	110	24	22	max	10.00	-0.05	-0.02	1.170	0.687	0.770	0.900
5/23/19	10:40	110	25	23	max	10.02	-0.03	0.10	0.714	0.869	0.836	0.809
5/23/19	10:40	110	26	24	max	10.10	-0.12	0.52	0.831	1.120	0.693	0.898
5/23/19	10:40	110	27	25	max	10.40	-0.08	-0.13	0.745	0.814	0.906	0.824
5/23/19	10:40	110	28	13	max	10.02	-0.04	0.07	0.585	0.572	0.546	0.568
5/23/19	12:45	111	2	13	none	10.30	-0.06	0.07	0.534	0.598	0.568	0.568
5/23/19	12:45	111	3	1	none	9.99	0.13	0.16	0.732	0.853	0.574	0.729
5/23/19	12:45	111	4	2	none	10.10	-0.16	-0.11	0.513	0.663	0.546	0.578
5/23/19	12:45	111	5	3	none	10.10	0.18	0.11	0.506	0.678	0.495	0.566
5/23/19	12:45	111	6	4	none	10.10	0.02	0.03	0.957	1.290	0.781	1.030
5/23/19	12:45	111	7	5	none	10.30	-0.12	0.08	0.511	0.632	0.653	0.602
5/23/19	12:45	111	8	6	none	10.10	-0.05	0.17	0.504	0.553	0.404	0.491
5/23/19	12:45	111	9	7	none	10.02	-0.08	0.04	0.383	0.374	0.409	0.389
5/23/19	12:45	111	10	8	none	10.10	0.12	0.13	0.494	0.531	0.579	0.536
5/23/19	12:45	111	11	9	none	10.30	0.08	0.03	0.559	0.640	0.508	0.572
5/23/19	12:45	111	12	10	none	10.02	0.02	0.12	0.542	0.775	0.536	0.627
5/23/19	12:45	111	13	11	none	10.10	-0.11	0.09	0.613	0.758	0.598	0.660
5/23/19	12:45	111	14	12	none	10.02	-0.03	-0.01	0.608	0.560	0.757	0.647

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	12:45	111	15	13	none	10.30	-0.03	0.09	0.511	0.577	0.545	0.545
5/23/19	12:45	111	16	14	none	10.30	0.02	0.02	0.547	0.544	0.583	0.558
5/23/19	12:45	111	17	15	none	10.50	0.00	0.06	0.616	0.734	0.567	0.643
5/23/19	12:45	111	18	16	none	10.10	0.03	0.19	0.544	0.626	0.490	0.556
5/23/19	12:45	111	19	17	none	10.02	-0.45	0.09	0.671	0.593	0.553	0.607
5/23/19	12:45	111	20	18	none	10.30	0.10	0.07	0.422	0.393	0.436	0.417
5/23/19	12:45	111	21	19	none	10.30	0.10	0.09	0.398	0.467	0.380	0.417
5/23/19	12:45	111	22	20	none	10.30	-0.18	0.12	0.524	0.627	0.668	0.609
5/23/19	12:45	111	23	21	none	9.99	0.10	0.02	0.533	0.552	0.599	0.562
5/23/19	12:45	111	24	22	none	9.98	-0.08	-0.03	0.703	0.639	0.536	0.630
5/23/19	12:45	111	25	23	none	10.02	0.00	0.01	0.545	0.828	0.867	0.761
5/23/19	12:45	111	26	24	none	10.10	-0.14	0.55	0.827	1.120	0.675	0.895
5/23/19	12:45	111	27	25	none	10.40	0.04	-0.02	0.700	0.612	0.824	0.717
5/23/19	12:45	111	28	13	none	10.30	-0.03	0.08	0.518	0.579	0.563	0.554
5/23/19	13:14	112	2	13	max	10.02	-0.04	0.04	0.849	0.599	0.643	0.705
5/23/19	13:14	112	3	1	max	10.00	0.05	0.16	0.931	0.975	0.594	0.851
5/23/19	13:14	112	4	2	max	10.02	-0.04	-0.10	0.852	0.691	0.616	0.727
5/23/19	13:14	112	5	3	max	10.02	0.02	0.14	0.784	0.828	0.555	0.732
5/23/19	13:14	112	6	4	max	10.10	0.13	0.03	0.737	0.639	0.604	0.663
5/23/19	13:14	112	7	5	max	10.30	-0.03	0.14	0.724	0.637	0.605	0.657
5/23/19	13:14	112	8	6	max	10.10	-0.04	0.15	0.769	0.667	0.572	0.674
5/23/19	13:14	112	9	7	max	10.02	-0.04	0.02	0.691	0.533	0.488	0.577
5/23/19	13:14	112	10	8	max	10.02	0.06	0.08	0.864	0.597	0.727	0.738
5/23/19	13:14	112	11	9	max	10.02	0.08	0.01	0.726	0.758	0.629	0.706
5/23/19	13:14	112	12	10	max	10.02	0.03	0.02	0.731	1.000	0.589	0.793
5/23/19	13:14	112	13	11	max	10.02	-0.02	0.05	0.899	0.834	0.653	0.802
5/23/19	13:14	112	14	12	max	10.30	-0.06	-0.04	0.867	0.627	0.711	0.742
5/23/19	13:14	112	15	13	max	10.30	-0.03	0.04	0.766	0.598	0.613	0.663

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	13:14	112	16	14	max	10.30	0.00	0.12	0.733	0.631	0.671	0.680
5/23/19	13:14	112	17	15	max	10.40	0.06	0.14	0.912	0.968	0.578	0.838
5/23/19	13:14	112	18	16	max	10.10	0.00	0.13	1.030	1.050	0.646	0.927
5/23/19	13:14	112	19	17	max	10.10	-0.32	0.08	1.170	1.140	0.966	1.100
5/23/19	13:14	112	20	18	max	10.30	0.03	0.05	0.891	0.573	0.708	0.736
5/23/19	13:14	112	21	19	max	10.02	0.09	0.10	0.860	0.665	0.487	0.688
5/23/19	13:14	112	22	20	max	10.30	-0.17	0.09	0.929	0.930	0.743	0.872
5/23/19	13:14	112	23	21	max	10.00	0.06	0.02	0.983	0.714	0.637	0.792
5/23/19	13:14	112	24	22	max	10.10	-0.05	-0.18	1.340	0.711	0.814	0.996
5/23/19	13:14	112	25	23	max	10.02	-0.04	0.13	0.944	1.100	0.939	0.998
5/23/19	13:14	112	26	24	max	10.10	-0.11	0.51	1.030	1.280	0.848	1.070
5/23/19	13:14	112	27	25	max	10.30	-0.06	-0.13	0.986	0.916	1.070	0.992
5/23/19	13:14	112	28	13	max	10.30	-0.03	0.04	0.812	0.581	0.609	0.675
5/23/19	14:00	113	2	13	none	10.30	-0.04	0.08	0.512	0.582	0.557	0.551
5/23/19	14:00	113	3	1	none	9.97	0.11	0.17	0.752	0.963	0.603	0.787
5/23/19	14:00	113	4	2	none	10.10	-0.14	-0.09	0.500	0.646	0.537	0.564
5/23/19	14:00	113	5	3	none	10.10	0.02	0.11	0.504	0.575	0.476	0.520
5/23/19	14:00	113	6	4	none	10.10	0.03	0.03	1.090	1.430	0.780	1.130
5/23/19	14:00	113	7	5	none	10.30	-0.14	0.10	0.509	0.594	0.606	0.571
5/23/19	14:00	113	8	6	none	10.10	-0.05	0.17	0.560	0.536	0.424	0.510
5/23/19	14:00	113	9	7	none	10.02	-0.08	0.05	0.385	0.384	0.417	0.396
5/23/19	14:00	113	10	8	none	10.02	0.14	0.12	0.449	0.416	0.477	0.448
5/23/19	14:00	113	11	9	none	10.30	0.09	0.03	0.566	0.722	0.558	0.620
5/23/19	14:00	113	12	10	none	10.02	0.35	0.09	0.448	0.693	0.560	0.576
5/23/19	14:00	113	13	11	none	10.02	-0.03	0.11	0.631	0.810	0.576	0.680
5/23/19	14:00	113	14	12	none	10.30	-0.06	-0.04	0.614	0.569	0.804	0.670
5/23/19	14:00	113	15	13	none	10.30	-0.06	0.09	0.490	0.572	0.504	0.523
5/23/19	14:00	113	16	14	none	10.30	-0.01	0.02	0.539	0.554	0.580	0.558

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	14:00	113	17	15	none	10.50	0.00	0.06	0.614	0.740	0.562	0.643
5/23/19	14:00	113	18	16	none	10.10	0.00	0.18	0.556	0.657	0.532	0.584
5/23/19	14:00	113	19	17	none	10.02	-0.47	0.10	0.592	0.580	0.523	0.566
5/23/19	14:00	113	20	18	none	10.30	0.09	0.08	0.422	0.426	0.432	0.427
5/23/19	14:00	113	21	19	none	10.30	0.09	0.11	0.407	0.541	0.402	0.455
5/23/19	14:00	113	22	20	none	10.30	-0.02	0.09	0.488	0.626	0.592	0.572
5/23/19	14:00	113	23	21	none	10.00	0.07	0.03	0.534	0.580	0.522	0.546
5/23/19	14:00	113	24	22	none	10.00	-0.08	-0.03	0.844	0.619	0.607	0.699
5/23/19	14:00	113	25	23	none	10.02	0.05	-0.01	0.557	0.982	0.679	0.760
5/23/19	14:00	113	26	24	none	10.10	-0.19	0.55	0.925	1.170	0.805	0.979
5/23/19	14:00	113	27	25	none	10.40	0.04	-0.02	0.650	0.564	0.892	0.716
5/23/19	14:00	113	28	13	none	10.30	-0.03	0.10	0.507	0.574	0.548	0.543
5/23/19	14:26	114	2	13	max	10.30	-0.04	0.02	0.877	0.601	0.654	0.721
5/23/19	14:26	114	3	1	max	10.10	0.07	0.16	1.050	1.040	0.623	0.925
5/23/19	14:26	114	4	2	max	10.02	-0.03	-0.10	0.806	0.692	0.622	0.711
5/23/19	14:26	114	5	3	max	10.02	0.02	0.13	0.849	0.935	0.578	0.802
5/23/19	14:26	114	6	4	max	10.10	0.14	0.03	0.688	0.702	0.659	0.683
5/23/19	14:26	114	7	5	max	10.30	-0.04	0.14	0.782	0.652	0.584	0.678
5/23/19	14:26	114	8	6	max	10.10	-0.02	0.15	0.871	0.611	0.551	0.692
5/23/19	14:26	114	9	7	max	10.02	-0.03	0.02	0.800	0.538	0.502	0.628
5/23/19	14:26	114	10	8	max	10.02	0.07	0.10	0.872	0.652	0.745	0.762
5/23/19	14:26	114	11	9	max	10.02	0.09	0.01	0.764	0.813	0.686	0.756
5/23/19	14:26	114	12	10	max	10.02	0.30	0.02	0.729	1.150	0.654	0.874
5/23/19	14:26	114	13	11	max	10.02	-0.02	0.05	0.907	0.855	0.645	0.810
5/23/19	14:26	114	14	12	max	10.30	-0.06	-0.04	0.906	0.643	0.769	0.780
5/23/19	14:26	114	15	13	max	10.02	-0.04	0.05	0.936	0.599	0.648	0.743
5/23/19	14:26	114	16	14	max	10.30	-0.01	0.12	0.829	0.623	0.652	0.707
5/23/19	14:26	114	17	15	max	10.30	0.11	0.15	0.792	0.918	0.570	0.773

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	14:26	114	18	16	max	10.10	0.00	0.13	0.926	1.030	0.625	0.877
5/23/19	14:26	114	19	17	max	10.02	-0.36	0.06	0.966	1.030	0.880	0.961
5/23/19	14:26	114	20	18	max	10.30	0.03	0.06	0.930	0.701	0.760	0.803
5/23/19	14:26	114	21	19	max	10.02	0.08	0.10	0.912	0.727	0.527	0.739
5/23/19	14:26	114	22	20	max	10.30	-0.16	0.10	0.816	0.948	0.762	0.845
5/23/19	14:26	114	23	21	max	10.00	0.05	0.02	0.983	0.779	0.655	0.817
5/23/19	14:26	114	24	22	max	10.02	-0.05	-0.16	1.230	0.783	0.893	0.986
5/23/19	14:26	114	25	23	max	10.02	-0.04	0.13	0.974	1.150	0.874	1.010
5/23/19	14:26	114	26	24	max	10.10	-0.11	0.51	1.040	1.300	0.882	1.090
5/23/19	14:26	114	27	25	max	10.40	-0.04	-0.13	0.955	1.100	1.120	1.060
5/23/19	14:26	114	28	13	max	10.30	-0.03	0.04	0.848	0.590	0.649	0.705
5/23/19	15:02	115	2	13	none	10.30	-0.05	0.08	0.506	0.581	0.537	0.542
5/23/19	15:02	115	3	1	none	9.97	0.14	0.16	0.770	0.878	0.588	0.755
5/23/19	15:02	115	4	2	none	10.10	-0.14	-0.09	0.508	0.700	0.542	0.589
5/23/19	15:02	115	5	3	none	10.10	0.02	0.11	0.509	0.634	0.487	0.547
5/23/19	15:02	115	6	4	none	10.10	0.19	0.03	0.822	1.150	0.777	0.929
5/23/19	15:02	115	7	5	none	10.02	-0.14	0.08	0.505	0.587	0.624	0.574
5/23/19	15:02	115	8	6	none	10.00	-0.06	0.17	0.522	0.550	0.407	0.497
5/23/19	15:02	115	9	7	none	10.02	-0.08	0.04	0.374	0.373	0.419	0.389
5/23/19	15:02	115	10	8	none	10.10	0.14	0.10	0.435	0.407	0.456	0.433
5/23/19	15:02	115	11	9	none	10.30	0.07	0.02	0.539	0.580	0.454	0.527
5/23/19	15:02	115	12	10	none	10.02	0.03	0.12	0.481	0.701	0.523	0.576
5/23/19	15:02	115	13	11	none	10.10	-0.05	0.10	0.628	0.801	0.584	0.678
5/23/19	15:02	115	14	12	none	10.02	-0.03	-0.01	0.611	0.565	0.779	0.658
5/23/19	15:02	115	15	13	none	10.02	-0.03	0.09	0.511	0.579	0.543	0.545
5/23/19	15:02	115	16	14	none	10.30	0.02	0.02	0.550	0.550	0.606	0.569
5/23/19	15:02	115	17	15	none	10.40	-0.01	0.05	0.618	0.744	0.561	0.646
5/23/19	15:02	115	18	16	none	10.00	0.01	0.18	0.559	0.772	0.572	0.642

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	15:02	115	19	17	none	10.10	-0.45	0.09	0.645	0.593	0.541	0.595
5/23/19	15:02	115	20	18	none	10.02	0.10	0.08	0.415	0.404	0.390	0.403
5/23/19	15:02	115	21	19	none	10.02	0.06	0.13	0.424	0.441	0.451	0.439
5/23/19	15:02	115	22	20	none	10.30	-0.02	0.13	0.521	0.655	0.622	0.602
5/23/19	15:02	115	23	21	none	9.95	0.10	0.02	0.545	0.531	0.566	0.547
5/23/19	15:02	115	24	22	none	9.94	-0.04	-0.03	0.846	0.561	0.557	0.669
5/23/19	15:02	115	25	23	none	10.10	0.00	0.08	0.574	1.280	0.789	0.930
5/23/19	15:02	115	26	24	none	10.10	-0.19	0.55	0.967	1.260	0.818	1.030
5/23/19	15:02	115	27	25	none	10.30	0.03	-0.02	0.681	0.579	0.916	0.739
5/23/19	15:02	115	28	13	none	10.02	-0.03	0.08	0.514	0.578	0.562	0.552
5/23/19	15:29	116	2	13	max	10.02	-0.04	0.07	0.586	0.569	0.544	0.567
5/23/19	15:29	116	3	1	max	9.96	0.09	0.15	0.845	1.050	0.654	0.866
5/23/19	15:29	116	4	2	max	10.10	-0.10	-0.09	0.643	0.813	0.613	0.695
5/23/19	15:29	116	5	3	max	10.10	0.03	0.15	0.686	0.860	0.639	0.735
5/23/19	15:29	116	6	4	max	10.10	0.17	0.03	0.766	0.946	0.683	0.806
5/23/19	15:29	116	7	5	max	10.30	-0.07	0.11	0.618	0.619	0.577	0.605
5/23/19	15:29	116	8	6	max	10.00	-0.01	0.17	0.743	0.582	0.493	0.615
5/23/19	15:29	116	9	7	max	10.02	-0.05	0.02	0.557	0.469	0.481	0.504
5/23/19	15:29	116	10	8	max	10.10	0.10	0.12	0.636	0.562	0.590	0.597
5/23/19	15:29	116	11	9	max	10.02	0.03	-0.02	0.588	0.697	0.550	0.615
5/23/19	15:29	116	12	10	max	10.02	0.36	0.03	0.570	0.950	0.590	0.725
5/23/19	15:29	116	13	11	max	10.10	-0.02	0.07	0.709	0.813	0.649	0.727
5/23/19	15:29	116	14	12	max	10.02	-0.06	-0.03	0.628	0.592	0.688	0.637
5/23/19	15:29	116	15	13	max	10.30	-0.05	0.07	0.568	0.567	0.531	0.556
5/23/19	15:29	116	16	14	max	10.30	-0.01	0.17	0.613	0.593	0.590	0.599
5/23/19	15:29	116	17	15	max	10.40	0.08	0.12	0.714	0.839	0.555	0.712
5/23/19	15:29	116	18	16	max	10.10	0.01	0.13	0.720	0.899	0.614	0.754
5/23/19	15:29	116	19	17	max	10.10	-0.43	0.06	0.807	0.712	0.720	0.748

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	15:29	116	20	18	max	10.02	0.06	0.08	0.561	0.531	0.546	0.546
5/23/19	15:29	116	21	19	max	10.30	0.09	0.10	0.608	0.606	0.461	0.562
5/23/19	15:29	116	22	20	max	10.30	-0.02	0.12	0.679	0.776	0.732	0.730
5/23/19	15:29	116	23	21	max	10.00	0.07	0.02	0.748	0.687	0.630	0.690
5/23/19	15:29	116	24	22	max	10.10	-0.04	-0.02	1.160	0.684	0.780	0.898
5/23/19	15:29	116	25	23	max	10.02	-0.02	0.09	0.734	0.997	0.902	0.884
5/23/19	15:29	116	26	24	max	10.10	-0.13	0.52	0.907	1.250	0.772	0.996
5/23/19	15:29	116	27	25	max	10.40	-0.05	-0.12	0.781	0.828	0.935	0.851
5/23/19	15:29	116	28	13	max	10.02	-0.04	0.07	0.613	0.570	0.565	0.583
5/23/19	15:56	117	2	13	max	10.30	-0.04	0.07	0.588	0.575	0.553	0.572
5/23/19	15:56	117	3	1	max	10.00	0.09	0.15	0.879	1.100	0.650	0.896
5/23/19	15:56	117	4	2	max	10.02	-0.07	-0.09	0.679	0.745	0.601	0.678
5/23/19	15:56	117	5	3	max	10.10	0.03	0.14	0.657	0.895	0.636	0.739
5/23/19	15:56	117	6	4	max	10.10	0.18	0.02	0.761	1.040	0.694	0.846
5/23/19	15:56	117	7	5	max	10.30	-0.07	0.11	0.633	0.650	0.631	0.638
5/23/19	15:56	117	8	6	max	10.00	-0.01	0.16	0.735	0.572	0.525	0.617
5/23/19	15:56	117	9	7	max	10.02	-0.06	0.02	0.566	0.473	0.487	0.510
5/23/19	15:56	117	10	8	max	10.10	0.10	0.13	0.599	0.570	0.601	0.590
5/23/19	15:56	117	11	9	max	10.30	0.04	-0.02	0.598	0.725	0.570	0.635
5/23/19	15:56	117	12	10	max	10.02	0.35	0.03	0.573	1.000	0.602	0.751
5/23/19	15:56	117	13	11	max	10.10	-0.03	0.07	0.707	0.812	0.619	0.717
5/23/19	15:56	117	14	12	max	10.02	-0.06	-0.04	0.709	0.579	0.705	0.667
5/23/19	15:56	117	15	13	max	10.30	-0.05	0.07	0.624	0.570	0.550	0.582
5/23/19	15:56	117	16	14	max	10.30	-0.02	0.16	0.628	0.588	0.602	0.606
5/23/19	15:56	117	17	15	max	10.40	0.09	0.12	0.724	0.821	0.555	0.708
5/23/19	15:56	117	18	16	max	10.10	0.00	0.13	0.727	0.934	0.590	0.764
5/23/19	15:56	117	19	17	max	10.10	-0.41	0.07	0.883	0.808	0.771	0.822
5/23/19	15:56	117	20	18	max	10.30	0.06	0.08	0.643	0.534	0.541	0.575

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/23/19	15:56	117	21	19	max	10.30	0.10	0.10	0.640	0.603	0.460	0.573
5/23/19	15:56	117	22	20	max	10.30	-0.02	0.11	0.653	0.701	0.705	0.687
5/23/19	15:56	117	23	21	max	10.00	0.06	0.02	0.781	0.694	0.640	0.707
5/23/19	15:56	117	24	22	max	10.00	-0.05	-0.02	1.060	0.697	0.792	0.865
5/23/19	15:56	117	25	23	max	10.02	-0.01	0.09	0.687	1.020	0.966	0.904
5/23/19	15:56	117	26	24	max	10.10	-0.14	0.52	0.898	1.240	0.749	0.982
5/23/19	15:56	117	27	25	max	10.40	-0.05	-0.13	0.773	0.854	0.964	0.867
5/23/19	15:56	117	28	13	max	10.02	-0.04	0.07	0.588	0.566	0.538	0.564
5/23/19	16:55	118	2	13	25%	9.97	-0.04	0.06	0.549	0.587	0.578	0.572
5/23/19	16:55	118	3	13	25%	20.00	-0.06	0.02	0.445	0.578	0.464	0.499
5/23/19	16:55	118	4	13	25%	30.00	-0.10	0.02	0.393	0.460	0.431	0.429
5/23/19	16:55	118	5	13	25%	40.00	-0.03	-0.09	0.354	0.397	0.384	0.379
5/23/19	16:55	118	6	13	25%	50.00	0.00	-0.15	0.329	0.414	0.331	0.360
5/23/19	16:55	118	7	13	50%	9.96	-0.05	0.05	0.596	0.593	0.609	0.599
5/23/19	16:55	118	8	13	50%	20.00	-0.05	0.01	0.454	0.583	0.479	0.508
5/23/19	16:55	118	9	13	50%	30.00	-0.07	0.01	0.401	0.467	0.439	0.437
5/23/19	16:55	118	10	13	50%	40.00	-0.02	-0.08	0.360	0.417	0.392	0.390
5/23/19	16:55	118	11	13	50%	50.00	0.02	-0.16	0.332	0.414	0.336	0.363
5/23/19	16:55	118	12	13	75%	9.99	-0.04	0.04	0.795	0.578	0.654	0.682
5/23/19	16:55	118	13	13	75%	20.00	-0.05	-0.01	0.473	0.600	0.494	0.525
5/23/19	16:55	118	14	13	75%	30.00	-0.08	0.00	0.409	0.475	0.445	0.444
5/23/19	16:55	118	15	13	75%	40.00	-0.02	-0.08	0.367	0.427	0.393	0.396
5/23/19	16:55	118	16	13	75%	50.00	0.03	-0.15	0.336	0.430	0.344	0.372
5/23/19	16:55	118	17	13	max	10.00	-0.04	0.01	0.890	0.574	0.714	0.737
5/23/19	16:55	118	18	13	max	20.00	-0.06	-0.02	0.501	0.600	0.519	0.542
5/23/19	16:55	118	19	13	max	30.00	-0.07	-0.01	0.418	0.482	0.444	0.449
5/23/19	16:55	118	20	13	max	40.00	-0.02	-0.09	0.369	0.423	0.396	0.396
5/23/19	16:55	118	21	13	max	50.00	0.03	-0.16	0.339	0.432	0.349	0.376

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	8:56	120	2	13	25%	10.00	-0.05	0.08	0.579	0.599	0.594	0.591
5/28/19	8:56	120	3	13	25%	20.00	-0.04	0.04	0.459	0.587	0.480	0.512
5/28/19	8:56	120	4	13	25%	30.00	-0.05	0.06	0.390	0.452	0.439	0.428
5/28/19	8:56	120	5	13	25%	40.00	0.01	-0.06	0.354	0.412	0.395	0.388
5/28/19	8:56	120	6	13	25%	50.00	0.08	-0.15	0.335	0.407	0.348	0.365
5/28/19	8:56	120	7	13	50%	10.00	-0.05	0.06	0.573	0.577	0.612	0.588
5/28/19	8:56	120	8	13	50%	20.00	-0.04	0.02	0.468	0.600	0.496	0.524
5/28/19	8:56	120	9	13	50%	30.00	-0.05	0.04	0.399	0.471	0.440	0.438
5/28/19	8:56	120	10	13	50%	40.00	0.01	-0.08	0.363	0.411	0.399	0.391
5/28/19	8:56	120	11	13	50%	50.00	0.08	-0.15	0.335	0.414	0.347	0.367
5/28/19	8:56	120	12	13	75%	10.00	-0.04	0.03	0.694	0.581	0.660	0.647
5/28/19	8:56	120	13	13	75%	20.00	-0.04	0.00	0.485	0.607	0.504	0.535
5/28/19	8:56	120	14	13	75%	30.00	-0.04	0.03	0.406	0.475	0.441	0.442
5/28/19	8:56	120	15	13	75%	40.00	0.02	-0.08	0.369	0.430	0.396	0.399
5/28/19	8:56	120	16	13	75%	50.00	0.09	-0.16	0.335	0.419	0.350	0.370
5/28/19	8:56	120	17	13	max	10.10	-0.04	0.01	0.855	0.561	0.664	0.704
5/28/19	8:56	120	18	13	max	20.00	-0.04	-0.01	0.527	0.609	0.512	0.551
5/28/19	8:56	120	19	13	max	30.00	-0.04	0.02	0.415	0.484	0.447	0.450
5/28/19	8:56	120	20	13	max	40.00	0.02	-0.08	0.375	0.435	0.406	0.406
5/28/19	8:56	120	21	13	max	50.00	0.09	-0.16	0.336	0.424	0.348	0.371
5/28/19	10:45	122	2	13	none	10.10	-0.02	0.08	2.170	2.540	2.000	2.240
5/28/19	10:45	122	3	1	none	9.66	0.11	0.02	1.120	0.823	0.736	0.908
5/28/19	10:45	122	4	2	none	10.02	0.41	-0.46	2.560	2.060	2.840	2.510
5/28/19	10:45	122	5	3	none	9.62	0.40	0.01	3.290	3.270	3.250	3.270

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	10:45	122	6	4	none	9.17	0.57	-0.07	5.830	6.530	5.380	5.930
5/28/19	10:45	122	7	5	none	9.21	-0.99	0.03	5.280	4.860	5.860	5.350
5/28/19	10:45	122	8	6	none	10.10	0.02	0.05	0.656	0.537	0.512	0.572
5/28/19	10:45	122	9	7	none	9.91	0.02	0.04	1.310	1.340	0.871	1.190
5/28/19	10:45	122	10	8	none	9.88	0.16	-0.03	1.890	2.220	1.760	1.960
5/28/19	10:45	122	11	9	none	9.71	0.02	-0.02	3.830	4.520	4.310	4.230
5/28/19	10:45	122	12	10	none	9.51	-0.03	-0.06	5.410	5.180	5.770	5.460
5/28/19	10:45	122	13	11	none	10.30	0.11	0.06	0.798	0.816	0.672	0.765
5/28/19	10:45	122	14	12	none	10.02	-0.13	-0.13	0.998	1.080	1.190	1.090
5/28/19	10:45	122	15	13	none	10.10	-0.31	0.08	2.350	2.730	2.190	2.430
5/28/19	10:45	122	16	14	none	10.00	0.08	-0.39	3.210	4.220	2.930	3.500
5/28/19	10:45	122	17	15	none	9.80	0.06	-0.46	4.840	5.330	4.910	5.030
5/28/19	10:45	122	18	16	none	10.10	0.02	0.11	1.370	1.330	1.270	1.320
5/28/19	10:45	122	19	17	none	10.10	-0.10	-0.16	1.290	1.560	1.470	1.450
5/28/19	10:45	122	20	18	none	9.81	-0.58	-0.17	2.430	2.680	2.440	2.520
5/28/19	10:45	122	21	19	none	9.57	-0.45	-0.02	4.150	4.390	4.490	4.340
5/28/19	10:45	122	22	20	none	9.42	0.53	0.14	5.770	5.160	5.810	5.590
5/28/19	10:45	122	23	21	none	9.80	0.07	0.02	0.739	0.698	0.663	0.701
5/28/19	10:45	122	24	22	none	9.80	-0.45	-0.10	1.840	2.030	1.620	1.840
5/28/19	10:45	122	25	23	none	9.94	-0.65	-0.14	2.730	2.490	2.600	2.610
5/28/19	10:45	122	26	24	none	9.24	-0.19	0.46	5.190	4.280	5.290	4.940
5/28/19	10:45	122	27	25	none	9.21	0.53	0.42	4.640	4.640	4.320	4.540
5/28/19	10:45	122	28	13	none	10.10	-0.32	0.07	2.260	2.610	2.110	2.340
5/28/19	11:23	123	2	13	none	20.00	-0.35	-0.03	1.830	2.440	1.790	2.040
5/28/19	11:23	123	3	1	none	19.60	0.03	0.31	0.690	0.941	0.447	0.722
5/28/19	11:23	123	4	2	none	19.80	1.66	-0.56	2.210	1.540	2.240	2.020
5/28/19	11:23	123	5	3	none	18.90	1.33	-0.01	4.730	4.420	4.290	4.480

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	11:23	123	6	4	none	18.40	0.02	-0.43	5.730	6.470	5.690	5.970
5/28/19	11:23	123	7	5	none	18.50	-1.78	0.88	5.290	5.050	5.820	5.400
5/28/19	11:23	123	8	6	none	20.30	0.02	0.08	0.519	0.633	0.439	0.536
5/28/19	11:23	123	9	7	none	19.50	0.97	-0.10	1.250	1.760	1.100	1.400
5/28/19	11:23	123	10	8	none	19.60	0.86	-0.75	1.650	2.350	1.850	1.970
5/28/19	11:23	123	11	9	none	19.60	0.02	-0.91	2.800	4.160	2.740	3.300
5/28/19	11:23	123	12	10	none	19.10	-0.69	-0.43	5.120	5.100	5.570	5.270
5/28/19	11:23	123	13	11	none	20.40	0.19	0.05	0.793	0.904	0.691	0.801
5/28/19	11:23	123	14	12	none	20.10	0.04	-0.45	1.060	1.290	1.040	1.140
5/28/19	11:23	123	15	13	none	20.00	-0.33	-0.34	1.800	2.340	1.710	1.970
5/28/19	11:23	123	16	14	none	19.90	-0.02	-0.82	2.800	3.460	3.130	3.140
5/28/19	11:23	123	17	15	none	19.60	0.03	-0.87	4.320	5.490	4.290	4.740
5/28/19	11:23	123	18	16	none	20.30	0.08	-0.09	1.090	1.140	0.896	1.050
5/28/19	11:23	123	19	17	none	20.10	-0.43	-0.02	1.020	1.100	0.947	1.020
5/28/19	11:23	123	20	18	none	19.60	-0.85	-0.51	2.000	2.490	2.050	2.190
5/28/19	11:23	123	21	19	none	19.30	-0.83	-0.66	3.550	4.280	3.760	3.870
5/28/19	11:23	123	22	20	none	19.00	1.00	-0.02	5.460	4.970	5.660	5.370
5/28/19	11:23	123	23	21	none	19.70	0.02	0.19	0.632	0.669	0.569	0.624
5/28/19	11:23	123	24	22	none	19.40	-0.66	-0.31	1.430	1.680	1.390	1.510
5/28/19	11:23	123	25	23	none	19.70	-1.32	-0.40	3.110	2.820	3.080	3.010
5/28/19	11:23	123	26	24	none	18.50	-0.35	0.81	5.130	4.900	5.350	5.130
5/28/19	11:23	123	27	25	none	18.50	1.54	0.53	4.980	5.120	4.870	4.990
5/28/19	11:23	123	28	13	none	20.00	-0.03	-0.03	1.910	2.580	1.810	2.130
5/28/19	13:14	124	2	13	max	10.00	-0.34	-0.01	2.620	3.050	2.540	2.750
5/28/19	13:14	124	3	1	max	9.64	0.07	0.03	1.360	0.981	0.833	1.080
5/28/19	13:14	124	4	2	max	10.00	0.44	-0.37	2.680	1.990	2.550	2.420
5/28/19	13:14	124	5	3	max	9.52	0.37	0.05	3.550	3.450	3.490	3.500
5/28/19	13:14	124	6	4	max	9.01	0.57	0.12	5.550	6.040	5.390	5.670

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	13:14	124	7	5	max	9.12	-0.97	0.03	5.460	5.060	5.870	5.480
5/28/19	13:14	124	8	6	max	10.10	0.02	0.04	1.250	0.727	0.710	0.932
5/28/19	13:14	124	9	7	max	9.79	0.02	0.05	1.610	1.590	1.140	1.470
5/28/19	13:14	124	10	8	max	9.87	0.12	-0.03	1.990	2.480	1.900	2.140
5/28/19	13:14	124	11	9	max	9.63	0.03	-0.30	3.890	4.530	4.310	4.250
5/28/19	13:14	124	12	10	max	9.45	-0.37	-0.09	5.370	4.970	5.540	5.300
5/28/19	13:14	124	13	11	max	10.30	0.13	0.04	1.200	0.914	0.743	0.972
5/28/19	13:14	124	14	12	max	10.02	-0.04	-0.03	1.180	1.200	1.160	1.180
5/28/19	13:14	124	15	13	max	9.97	-0.36	0.00	2.610	3.040	2.580	2.760
5/28/19	13:14	124	16	14	max	9.97	0.09	-0.41	3.390	4.800	3.080	3.830
5/28/19	13:14	124	17	15	max	9.71	0.09	-0.42	4.840	5.150	4.990	4.990
5/28/19	13:14	124	18	16	max	9.98	-0.04	0.02	1.560	1.420	1.330	1.440
5/28/19	13:14	124	19	17	max	10.00	-0.12	-0.15	1.410	1.460	1.430	1.430
5/28/19	13:14	124	20	18	max	9.75	-0.52	-0.17	2.560	2.890	2.390	2.620
5/28/19	13:14	124	21	19	max	9.47	-0.39	-0.08	4.200	4.580	4.530	4.440
5/28/19	13:14	124	22	20	max	9.21	0.53	0.11	5.530	5.100	5.490	5.380
5/28/19	13:14	124	23	21	max	9.74	0.06	0.02	1.150	0.737	0.714	0.889
5/28/19	13:14	124	24	22	max	9.71	-0.50	-0.03	1.870	1.950	1.630	1.830
5/28/19	13:14	124	25	23	max	9.76	-0.54	-0.13	2.790	2.700	2.660	2.720
5/28/19	13:14	124	26	24	max	9.12	-0.18	0.40	4.970	4.260	4.950	4.740
5/28/19	13:14	124	27	25	max	9.08	0.50	0.39	4.740	4.810	4.450	4.670
5/28/19	13:14	124	28	13	max	9.93	-0.30	0.01	2.580	3.110	2.650	2.790
5/28/19	13:41	125	2	13	max	20.00	-0.13	-0.02	2.000	2.720	2.240	2.340
5/28/19	13:41	125	3	1	max	19.60	0.30	0.31	0.759	1.010	0.512	0.786
5/28/19	13:41	125	4	2	max	19.90	1.55	-0.66	2.320	1.720	2.210	2.100
5/28/19	13:41	125	5	3	max	19.00	1.17	0.06	4.560	4.420	4.320	4.430
5/28/19	13:41	125	6	4	max	18.40	0.52	-0.51	6.000	6.680	5.970	6.220
5/28/19	13:41	125	7	5	max	18.50	-1.81	0.68	5.370	5.070	5.640	5.360

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	13:41	125	8	6	max	20.40	0.03	0.05	0.613	0.715	0.501	0.616
5/28/19	13:41	125	9	7	max	19.50	0.92	-0.14	1.430	1.890	1.300	1.560
5/28/19	13:41	125	10	8	max	19.70	0.77	-0.78	1.770	2.440	1.870	2.050
5/28/19	13:41	125	11	9	max	19.60	0.03	-0.85	3.070	4.270	3.210	3.560
5/28/19	13:41	125	12	10	max	19.20	-0.85	-0.39	4.940	5.070	5.360	5.130
5/28/19	13:41	125	13	11	max	20.50	0.02	0.07	0.836	0.931	0.707	0.830
5/28/19	13:41	125	14	12	max	20.02	0.10	-0.48	1.110	1.370	1.100	1.200
5/28/19	13:41	125	15	13	max	20.00	-0.13	-0.02	2.040	2.750	2.300	2.380
5/28/19	13:41	125	16	14	max	20.00	-0.17	-0.88	2.860	4.020	2.870	3.300
5/28/19	13:41	125	17	15	max	19.60	0.15	-0.91	4.370	5.150	4.440	4.670
5/28/19	13:41	125	18	16	max	20.30	0.04	-0.09	1.150	1.160	0.921	1.080
5/28/19	13:41	125	19	17	max	20.10	-0.41	-0.30	1.030	1.240	1.010	1.100
5/28/19	13:41	125	20	18	max	19.60	-0.86	-0.52	2.020	2.690	2.050	2.280
5/28/19	13:41	125	21	19	max	19.30	-0.77	-0.60	3.600	4.290	3.830	3.920
5/28/19	13:41	125	22	20	max	19.00	1.02	-0.09	5.670	5.160	5.710	5.520
5/28/19	13:41	125	23	21	max	19.70	0.12	0.03	0.689	0.715	0.603	0.671
5/28/19	13:41	125	24	22	max	19.30	-0.74	-0.37	1.470	1.950	1.470	1.650
5/28/19	13:41	125	25	23	max	19.70	-1.22	-0.38	3.220	3.030	3.320	3.190
5/28/19	13:41	125	26	24	max	18.50	-0.45	0.88	5.340	5.210	5.550	5.370
5/28/19	13:41	125	27	25	max	18.50	1.46	0.52	5.130	5.200	4.910	5.080
5/28/19	13:41	125	28	13	max	20.00	-0.10	-0.02	2.020	2.640	2.260	2.320
5/28/19	14:31	126	2	13	none	10.00	-0.06	0.05	0.553	0.785	0.487	0.622
5/28/19	14:31	126	3	1	none	9.67	-0.01	0.30	0.724	0.853	0.639	0.744
5/28/19	14:31	126	4	2	none	9.87	-0.04	-0.13	0.687	0.848	0.829	0.791
5/28/19	14:31	126	5	3	none	9.85	0.07	-0.02	0.484	0.398	0.665	0.527
5/28/19	14:31	126	6	4	none	9.77	0.82	-0.08	1.540	1.540	1.830	1.640
5/28/19	14:31	126	7	5	none	9.39	0.02	0.13	4.700	5.920	4.910	5.200
5/28/19	14:31	126	8	6	none	9.86	0.05	0.02	0.479	0.449	0.487	0.472

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	14:31	126	9	7	none	9.98	-0.02	0.05	0.454	0.532	0.456	0.482
5/28/19	14:31	126	10	8	none	9.97	-0.15	0.08	0.435	0.509	0.443	0.463
5/28/19	14:31	126	11	9	none	9.73	0.54	0.01	0.867	1.120	1.020	1.010
5/28/19	14:31	126	12	10	none	9.73	-0.02	-0.03	2.590	2.780	2.910	2.760
5/28/19	14:31	126	13	11	none	10.00	-0.05	0.15	0.672	0.818	0.602	0.703
5/28/19	14:31	126	14	12	none	10.10	-0.07	-0.10	0.656	0.825	0.721	0.737
5/28/19	14:31	126	15	13	none	10.10	-0.05	0.05	0.588	0.775	0.511	0.635
5/28/19	14:31	126	16	14	none	9.95	0.05	0.02	0.659	0.793	0.577	0.682
5/28/19	14:31	126	17	15	none	9.87	0.02	-0.15	1.450	1.470	1.500	1.470
5/28/19	14:31	126	18	16	none	9.90	0.11	0.17	0.630	0.754	0.621	0.671
5/28/19	14:31	126	19	17	none	9.81	-0.09	0.03	0.826	1.000	0.679	0.847
5/28/19	14:31	126	20	18	none	9.87	-0.34	0.30	0.625	0.995	0.567	0.753
5/28/19	14:31	126	21	19	none	9.83	-0.30	0.12	0.721	1.220	0.563	0.882
5/28/19	14:31	126	22	20	none	9.66	0.03	0.17	2.220	2.460	2.190	2.300
5/28/19	14:31	126	23	21	none	9.76	0.02	0.14	0.529	0.509	0.507	0.515
5/28/19	14:31	126	24	22	none	9.88	-0.04	-0.03	1.040	0.992	0.713	0.927
5/28/19	14:31	126	25	23	none	9.92	-0.02	-0.19	0.637	0.817	1.010	0.834
5/28/19	14:31	126	26	24	none	9.74	-0.16	0.18	0.845	1.000	0.924	0.927
5/28/19	14:31	126	27	25	none	9.46	-0.01	0.60	3.060	3.380	2.910	3.120
5/28/19	14:31	126	28	13	none	10.00	-0.07	0.06	0.559	0.768	0.501	0.620
5/28/19	14:59	127	2	13	none	20.00	-0.04	0.14	0.488	0.604	0.488	0.529
5/28/19	14:59	127	3	1	none	19.60	-0.08	0.30	0.570	0.663	0.638	0.625
5/28/19	14:59	127	4	2	none	19.70	-0.09	-0.13	0.575	0.618	0.713	0.638
5/28/19	14:59	127	5	3	none	19.80	0.18	-0.06	0.393	0.419	0.473	0.430
5/28/19	14:59	127	6	4	none	19.60	0.99	-0.06	0.747	1.300	0.830	0.990
5/28/19	14:59	127	7	5	none	18.90	1.01	0.03	4.270	4.820	4.480	4.530
5/28/19	14:59	127	8	6	none	19.80	0.08	0.30	0.377	0.449	0.395	0.408
5/28/19	14:59	127	9	7	none	19.90	-0.48	-0.04	0.432	0.490	0.505	0.477

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	14:59	127	10	8	none	19.90	-0.14	0.02	0.413	0.431	0.532	0.462
5/28/19	14:59	127	11	9	none	19.40	0.80	0.35	0.857	1.160	0.914	0.984
5/28/19	14:59	127	12	10	none	19.40	0.01	0.11	2.160	2.390	2.250	2.270
5/28/19	14:59	127	13	11	none	19.90	0.00	0.17	0.539	0.671	0.550	0.589
5/28/19	14:59	127	14	12	none	20.00	-0.02	-0.06	0.541	0.546	0.654	0.583
5/28/19	14:59	127	15	13	none	20.00	-0.03	0.15	0.463	0.589	0.457	0.507
5/28/19	14:59	127	16	14	none	19.80	0.08	0.10	0.623	0.883	0.582	0.709
5/28/19	14:59	127	17	15	none	19.60	-0.07	-0.36	1.560	1.770	1.610	1.650
5/28/19	14:59	127	18	16	none	19.90	0.02	0.02	0.421	0.444	0.509	0.460
5/28/19	14:59	127	19	17	none	19.90	0.12	0.35	0.505	0.553	0.473	0.511
5/28/19	14:59	127	20	18	none	20.00	-0.09	0.33	0.486	0.484	0.553	0.509
5/28/19	14:59	127	21	19	none	19.70	-0.50	0.02	0.634	0.923	0.542	0.718
5/28/19	14:59	127	22	20	none	19.50	0.18	0.11	1.920	2.390	1.840	2.070
5/28/19	14:59	127	23	21	none	19.70	0.41	0.13	0.387	0.478	0.431	0.434
5/28/19	14:59	127	24	22	none	19.90	-0.02	-0.42	0.407	0.499	0.499	0.471
5/28/19	14:59	127	25	23	none	19.80	-0.36	-0.03	0.404	0.437	0.466	0.436
5/28/19	14:59	127	26	24	none	19.70	0.13	0.09	0.476	0.573	0.551	0.535
5/28/19	14:59	127	27	25	none	19.10	-0.42	0.68	2.670	2.780	2.880	2.780
5/28/19	14:59	127	28	13	none	20.00	-0.01	0.15	0.457	0.583	0.464	0.505
5/28/19	15:28	128	2	13	max	9.99	-0.05	0.03	1.020	0.749	0.571	0.802
5/28/19	15:28	128	3	1	max	9.68	-0.01	0.03	1.100	1.050	0.753	0.979
5/28/19	15:28	128	4	2	max	9.82	-0.06	-0.09	0.987	0.839	0.992	0.942
5/28/19	15:28	128	5	3	max	9.75	0.06	0.05	0.838	0.465	0.729	0.695
5/28/19	15:28	128	6	4	max	9.71	0.56	0.05	1.290	1.930	1.530	1.600
5/28/19	15:28	128	7	5	max	9.27	0.34	0.56	3.970	4.220	4.270	4.160
5/28/19	15:28	128	8	6	max	9.87	0.07	0.10	1.010	0.587	0.839	0.828
5/28/19	15:28	128	9	7	max	9.95	-0.02	0.04	0.918	0.720	0.573	0.750
5/28/19	15:28	128	10	8	max	9.95	-0.14	0.07	0.973	0.610	0.635	0.758

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	15:28	128	11	9	max	9.66	0.53	0.01	1.080	1.220	1.070	1.120
5/28/19	15:28	128	12	10	max	9.65	-0.17	-0.01	2.670	2.820	2.950	2.820
5/28/19	15:28	128	13	11	max	10.00	-0.01	0.10	0.965	0.843	0.687	0.839
5/28/19	15:28	128	14	12	max	10.00	-0.05	-0.10	1.050	0.719	0.814	0.872
5/28/19	15:28	128	15	13	max	9.98	-0.05	0.02	0.941	0.738	0.576	0.767
5/28/19	15:28	128	16	14	max	9.86	0.04	0.01	0.888	0.822	0.630	0.788
5/28/19	15:28	128	17	15	max	9.82	0.00	-0.16	1.520	1.520	1.520	1.520
5/28/19	15:28	128	18	16	max	9.87	0.06	0.15	1.060	0.893	0.696	0.895
5/28/19	15:28	128	19	17	max	9.78	0.06	0.03	1.230	0.864	0.963	1.030
5/28/19	15:28	128	20	18	max	9.83	-0.03	0.03	0.984	1.260	0.762	1.020
5/28/19	15:28	128	21	19	max	9.77	-0.02	0.13	1.030	1.100	0.644	0.944
5/28/19	15:28	128	22	20	max	9.55	0.03	0.16	2.410	2.660	2.420	2.500
5/28/19	15:28	128	23	21	max	9.67	0.16	0.15	1.100	0.678	0.695	0.846
5/28/19	15:28	128	24	22	max	9.83	-0.03	-0.18	1.040	0.997	0.708	0.927
5/28/19	15:28	128	25	23	max	9.84	-0.30	-0.06	1.020	1.100	1.100	1.070
5/28/19	15:28	128	26	24	max	9.63	-0.14	0.17	1.200	1.340	1.120	1.220
5/28/19	15:28	128	27	25	max	9.35	0.01	0.54	3.160	3.230	3.290	3.230
5/28/19	15:28	128	28	13	max	10.00	-0.04	0.04	0.843	0.721	0.581	0.723
5/28/19	15:55	129	2	13	max	20.00	-0.05	0.12	0.523	0.637	0.462	0.545
5/28/19	15:55	129	3	1	max	19.50	-0.09	0.03	0.626	0.639	0.710	0.659
5/28/19	15:55	129	4	2	max	19.70	-0.05	-0.15	0.667	0.685	0.744	0.699
5/28/19	15:55	129	5	3	max	19.70	0.17	-0.06	0.485	0.470	0.542	0.500
5/28/19	15:55	129	6	4	max	19.60	0.97	-0.10	0.824	1.350	0.894	1.050
5/28/19	15:55	129	7	5	max	18.90	0.98	0.03	4.220	4.770	4.610	4.540
5/28/19	15:55	129	8	6	max	19.80	0.11	0.03	0.476	0.536	0.452	0.489
5/28/19	15:55	129	9	7	max	20.00	-0.51	-0.05	0.556	0.616	0.606	0.593
5/28/19	15:55	129	10	8	max	19.90	-0.19	0.02	0.483	0.481	0.503	0.489
5/28/19	15:55	129	11	9	max	19.50	0.78	0.02	0.921	1.170	1.010	1.040

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/28/19	15:55	129	12	10	max	19.40	-0.01	0.10	2.400	2.660	2.520	2.530
5/28/19	15:55	129	13	11	max	20.00	0.02	0.15	0.610	0.746	0.552	0.641
5/28/19	15:55	129	14	12	max	20.10	-0.04	-0.15	0.607	0.590	0.678	0.626
5/28/19	15:55	129	15	13	max	19.90	-0.05	0.13	0.522	0.647	0.471	0.552
5/28/19	15:55	129	16	14	max	19.70	0.07	0.09	0.667	0.866	0.592	0.718
5/28/19	15:55	129	17	15	max	19.60	-0.07	-0.36	1.610	1.800	1.650	1.690
5/28/19	15:55	129	18	16	max	19.90	0.17	0.02	0.545	0.607	0.531	0.562
5/28/19	15:55	129	19	17	max	19.90	0.18	0.31	0.585	0.701	0.554	0.616
5/28/19	15:55	129	20	18	max	19.90	-0.15	0.30	0.543	0.636	0.602	0.595
5/28/19	15:55	129	21	19	max	19.60	-0.48	0.02	0.665	0.922	0.556	0.730
5/28/19	15:55	129	22	20	max	19.40	0.19	0.13	2.010	2.590	1.980	2.210
5/28/19	15:55	129	23	21	max	19.70	0.36	0.13	0.456	0.482	0.469	0.469
5/28/19	15:55	129	24	22	max	19.80	-0.02	-0.36	0.459	0.551	0.555	0.524
5/28/19	15:55	129	25	23	max	19.90	-0.40	-0.02	0.463	0.477	0.551	0.499
5/28/19	15:55	129	26	24	max	19.70	0.12	0.13	0.558	0.643	0.670	0.625
5/28/19	15:55	129	27	25	max	19.10	-0.32	0.70	2.660	2.840	2.900	2.800
5/28/19	15:55	129	28	13	max	20.00	-0.03	0.13	0.486	0.647	0.454	0.536
5/29/19	9:24	131	2	13	none	25.70	-0.04	-0.03	0.424	0.485	0.458	0.456
5/29/19	9:24	131	3	11	none	25.40	-0.01	0.03	0.455	0.606	0.474	0.516
5/29/19	9:24	131	4	12	none	25.50	-0.07	-0.17	0.402	0.431	0.485	0.440
5/29/19	9:24	131	5	13	none	25.70	-0.01	-0.01	0.418	0.491	0.456	0.456
5/29/19	9:24	131	6	14	none	25.80	0.14	0.17	0.410	0.438	0.463	0.438
5/29/19	9:24	131	7	15	none	26.10	0.17	0.10	0.443	0.617	0.461	0.513
5/29/19	9:24	131	8	13	none	25.70	-0.04	-0.03	0.416	0.486	0.458	0.454
5/29/19	9:36	132	2	13	none	51.40	0.02	-0.02	0.330	0.381	0.341	0.351
5/29/19	9:36	132	3	11	none	50.50	0.02	0.16	0.334	0.419	0.357	0.371
5/29/19	9:36	132	4	12	none	51.10	0.06	-0.17	0.311	0.381	0.316	0.338

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	9:36	132	5	13	none	51.40	0.02	-0.02	0.328	0.387	0.336	0.352
5/29/19	9:36	132	6	14	none	51.60	0.36	-0.48	0.330	0.412	0.368	0.371
5/29/19	9:36	132	7	15	none	52.10	0.39	-0.16	0.359	0.470	0.352	0.397
5/29/19	9:36	132	8	13	none	51.40	0.18	-0.19	0.345	0.409	0.349	0.369
5/29/19	9:46	133	2	13	max	25.70	-0.04	-0.06	0.460	0.517	0.479	0.486
5/29/19	9:46	133	3	11	max	25.40	0.02	0.01	0.507	0.664	0.496	0.561
5/29/19	9:46	133	4	12	max	25.60	-0.05	-0.32	0.441	0.444	0.543	0.478
5/29/19	9:46	133	5	13	max	25.70	-0.02	-0.04	0.452	0.520	0.483	0.486
5/29/19	9:46	133	6	14	max	25.80	0.15	0.07	0.425	0.473	0.469	0.456
5/29/19	9:46	133	7	15	max	26.00	0.14	0.07	0.465	0.647	0.472	0.535
5/29/19	9:46	133	8	13	max	25.70	-0.05	-0.05	0.457	0.520	0.484	0.488
5/29/19	9:57	134	2	13	max	51.40	0.19	-0.02	0.351	0.427	0.360	0.381
5/29/19	9:57	134	3	11	max	50.60	0.18	0.14	0.349	0.481	0.369	0.404
5/29/19	9:57	134	4	12	max	51.10	0.10	-0.02	0.321	0.388	0.332	0.348
5/29/19	9:57	134	5	13	max	51.40	0.02	-0.02	0.343	0.424	0.355	0.376
5/29/19	9:57	134	6	14	max	51.60	0.36	-0.50	0.345	0.434	0.387	0.390
5/29/19	9:57	134	7	15	max	52.10	0.34	-0.17	0.363	0.476	0.349	0.400
5/29/19	9:57	134	8	13	max	51.40	0.19	-0.02	0.357	0.430	0.359	0.383
5/29/19	10:13	135	2	13	none	25.70	-0.03	-0.02	0.418	0.492	0.456	0.456
5/29/19	10:13	135	3	11	none	25.40	-0.01	0.01	0.453	0.601	0.479	0.515
5/29/19	10:13	135	4	12	none	25.60	-0.06	-0.16	0.399	0.439	0.478	0.440
5/29/19	10:13	135	5	13	none	25.70	0.03	0.01	0.416	0.490	0.465	0.458
5/29/19	10:13	135	6	14	none	25.90	0.16	0.18	0.407	0.449	0.449	0.435
5/29/19	10:13	135	7	15	none	26.10	0.16	0.08	0.453	0.633	0.469	0.525
5/29/19	10:13	135	8	13	none	25.70	-0.02	-0.02	0.409	0.481	0.456	0.450

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	10:24	136	2	13	max	25.70	-0.03	-0.04	0.484	0.532	0.503	0.506
5/29/19	10:24	136	3	11	max	25.40	0.02	0.01	0.505	0.658	0.509	0.562
5/29/19	10:24	136	4	12	max	25.60	-0.03	-0.02	0.457	0.468	0.543	0.491
5/29/19	10:24	136	5	13	max	25.70	0.01	-0.02	0.474	0.540	0.509	0.508
5/29/19	10:24	136	6	14	max	25.80	0.17	0.05	0.444	0.495	0.491	0.477
5/29/19	10:24	136	7	15	max	26.00	0.10	0.07	0.477	0.703	0.487	0.565
5/29/19	10:24	136	8	13	max	25.70	-0.04	-0.05	0.465	0.529	0.506	0.501
5/29/19	10:34	137	2	13	none	51.50	0.19	-0.02	0.337	0.397	0.341	0.360
5/29/19	10:34	137	3	11	none	50.60	0.19	0.17	0.336	0.442	0.355	0.380
5/29/19	10:34	137	4	12	none	51.10	0.10	-0.18	0.311	0.376	0.311	0.334
5/29/19	10:34	137	5	13	none	51.40	0.03	-0.02	0.329	0.379	0.334	0.348
5/29/19	10:34	137	6	14	none	51.70	0.39	-0.49	0.331	0.416	0.364	0.372
5/29/19	10:34	137	7	15	none	52.10	0.31	-0.15	0.358	0.474	0.354	0.399
5/29/19	10:34	137	8	13	none	51.40	0.19	-0.19	0.345	0.402	0.350	0.366
5/29/19	10:46	138	2	13	max	51.40	0.19	-0.02	0.356	0.430	0.373	0.387
5/29/19	10:46	138	3	11	max	50.60	0.02	0.13	0.349	0.476	0.373	0.403
5/29/19	10:46	138	4	12	max	51.10	0.11	-0.02	0.321	0.389	0.349	0.354
5/29/19	10:46	138	5	13	max	51.40	0.02	-0.02	0.349	0.432	0.369	0.385
5/29/19	10:46	138	6	14	max	51.60	0.38	-0.47	0.351	0.448	0.401	0.402
5/29/19	10:46	138	7	15	max	52.10	0.31	-0.16	0.363	0.500	0.369	0.416
5/29/19	10:46	138	8	13	max	51.40	0.18	-0.02	0.363	0.435	0.377	0.393
5/29/19	11:01	139	2	13	none	25.70	-0.06	-0.01	0.420	0.502	0.442	0.456
5/29/19	11:01	139	3	11	none	25.40	-0.01	0.01	0.449	0.592	0.480	0.511
5/29/19	11:01	139	4	12	none	25.60	-0.06	-0.17	0.401	0.433	0.485	0.441
5/29/19	11:01	139	5	13	none	25.70	0.00	0.00	0.416	0.493	0.455	0.456
5/29/19	11:01	139	6	14	none	25.90	0.17	0.14	0.407	0.445	0.451	0.434

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	11:01	139	7	15	none	26.10	0.16	0.07	0.451	0.641	0.453	0.523
5/29/19	11:01	139	8	13	none	25.70	-0.02	-0.04	0.418	0.478	0.457	0.452
5/29/19	11:01	139	9	13	max	25.70	-0.03	-0.03	0.515	0.554	0.541	0.537
5/29/19	11:01	139	10	11	max	25.40	0.03	0.02	0.516	0.667	0.528	0.575
5/29/19	11:01	139	11	12	max	25.60	-0.05	-0.18	0.499	0.502	0.574	0.526
5/29/19	11:01	139	12	13	max	25.70	0.02	-0.01	0.507	0.558	0.552	0.540
5/29/19	11:01	139	13	14	max	25.80	0.17	0.06	0.455	0.508	0.520	0.495
5/29/19	11:01	139	14	15	max	26.10	0.16	0.10	0.501	0.708	0.523	0.585
5/29/19	11:01	139	15	13	max	25.70	-0.03	-0.03	0.505	0.537	0.518	0.520
5/29/19	11:01	139	16	13	none	51.40	0.02	-0.02	0.345	0.406	0.351	0.369
5/29/19	11:01	139	17	11	none	50.60	0.02	0.15	0.337	0.452	0.352	0.384
5/29/19	11:01	139	18	12	none	51.10	0.09	-0.19	0.309	0.381	0.319	0.338
5/29/19	11:01	139	19	13	none	51.40	0.03	-0.02	0.327	0.386	0.331	0.349
5/29/19	11:01	139	20	14	none	51.60	0.36	-0.50	0.336	0.423	0.371	0.378
5/29/19	11:01	139	21	15	none	52.10	0.35	-0.19	0.351	0.461	0.333	0.386
5/29/19	11:01	139	22	13	none	51.40	0.02	-0.19	0.344	0.396	0.347	0.363
5/29/19	11:01	139	23	13	max	51.40	0.17	-0.16	0.373	0.466	0.403	0.416
5/29/19	11:01	139	24	11	max	50.60	0.13	0.13	0.356	0.496	0.385	0.417
5/29/19	11:01	139	25	12	max	51.10	0.09	-0.03	0.338	0.404	0.381	0.375
5/29/19	11:01	139	26	13	max	51.40	0.02	-0.19	0.362	0.454	0.388	0.403
5/29/19	11:01	139	27	14	max	51.60	0.35	-0.44	0.359	0.469	0.417	0.417
5/29/19	11:01	139	28	15	max	52.00	0.03	-0.16	0.364	0.506	0.374	0.420
5/29/19	11:01	139	29	13	max	51.40	0.19	-0.17	0.372	0.454	0.399	0.410
5/29/19	12:45	140	2	13	none	25.70	-0.04	-0.03	0.422	0.508	0.455	0.463
5/29/19	12:45	140	3	11	none	25.30	0.01	0.02	0.456	0.633	0.474	0.527
5/29/19	12:45	140	4	12	none	25.50	-0.07	-0.15	0.408	0.427	0.490	0.443
5/29/19	12:45	140	5	13	none	25.70	0.02	-0.02	0.421	0.509	0.465	0.466
5/29/19	12:45	140	6	14	none	25.80	0.16	0.15	0.413	0.466	0.455	0.445

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	12:45	140	7	15	none	26.10	0.17	0.08	0.447	0.650	0.452	0.525
5/29/19	12:45	140	8	13	none	25.70	-0.04	-0.03	0.437	0.516	0.486	0.481
5/29/19	12:45	140	9	13	max	25.70	-0.03	-0.05	0.491	0.556	0.542	0.530
5/29/19	12:45	140	10	11	max	25.40	0.01	0.02	0.489	0.653	0.528	0.561
5/29/19	12:45	140	11	12	max	25.60	-0.05	-0.10	0.479	0.508	0.563	0.518
5/29/19	12:45	140	12	13	max	25.70	0.00	-0.03	0.517	0.568	0.569	0.552
5/29/19	12:45	140	13	14	max	25.80	0.17	0.07	0.487	0.522	0.546	0.519
5/29/19	12:45	140	14	15	max	26.10	0.17	0.09	0.507	0.740	0.520	0.598
5/29/19	12:45	140	15	13	max	25.70	-0.03	-0.05	0.490	0.546	0.527	0.521
5/29/19	12:45	140	16	13	none	51.40	0.19	-0.19	0.369	0.398	0.355	0.374
5/29/19	12:45	140	17	11	none	50.50	0.17	0.15	0.348	0.430	0.356	0.380
5/29/19	12:45	140	18	12	none	51.10	0.09	-0.18	0.325	0.377	0.319	0.341
5/29/19	12:45	140	19	13	none	51.40	0.02	-0.19	0.339	0.397	0.338	0.359
5/29/19	12:45	140	20	14	none	51.60	0.34	-0.47	0.340	0.418	0.369	0.377
5/29/19	12:45	140	21	15	none	52.10	0.35	-0.18	0.358	0.476	0.350	0.399
5/29/19	12:45	140	22	13	none	51.40	0.02	-0.18	0.355	0.397	0.342	0.366
5/29/19	12:45	140	23	13	max	51.40	0.19	-0.13	0.394	0.478	0.408	0.428
5/29/19	12:45	140	24	11	max	50.60	0.02	0.15	0.378	0.511	0.396	0.432
5/29/19	12:45	140	25	12	max	51.10	0.12	-0.03	0.351	0.414	0.403	0.390
5/29/19	12:45	140	26	13	max	51.40	0.02	-0.13	0.395	0.481	0.414	0.431
5/29/19	12:45	140	27	14	max	51.60	0.41	-0.39	0.392	0.488	0.432	0.439
5/29/19	12:45	140	28	15	max	52.20	0.45	-0.12	0.381	0.548	0.392	0.447
5/29/19	12:45	140	29	13	max	51.40	0.16	-0.10	0.387	0.495	0.418	0.436
5/29/19	13:36	141	2	13	none	25.70	-0.03	-0.02	0.426	0.521	0.465	0.472
5/29/19	13:36	141	3	11	none	25.40	0.00	0.01	0.452	0.609	0.477	0.517
5/29/19	13:36	141	4	12	none	25.60	-0.04	-0.14	0.401	0.447	0.475	0.442
5/29/19	13:36	141	5	13	none	25.70	0.01	0.02	0.426	0.523	0.461	0.472
5/29/19	13:36	141	6	14	none	25.90	0.15	0.15	0.420	0.474	0.473	0.456

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	13:36	141	7	15	none	26.10	0.18	0.08	0.448	0.659	0.453	0.529
5/29/19	13:36	141	8	13	none	25.70	-0.02	-0.02	0.425	0.511	0.468	0.469
5/29/19	13:36	141	9	13	max	25.70	-0.03	-0.05	0.548	0.565	0.602	0.572
5/29/19	13:36	141	10	11	max	25.40	0.01	0.00	0.513	0.678	0.561	0.588
5/29/19	13:36	141	11	12	max	25.60	-0.04	-0.13	0.504	0.511	0.589	0.536
5/29/19	13:36	141	12	13	max	25.70	0.02	-0.02	0.540	0.571	0.592	0.568
5/29/19	13:36	141	13	14	max	25.80	0.16	0.08	0.538	0.550	0.600	0.563
5/29/19	13:36	141	14	15	max	26.10	0.06	0.05	0.483	0.696	0.512	0.572
5/29/19	13:36	141	15	13	max	25.70	-0.03	-0.02	0.587	0.583	0.613	0.594
5/29/19	13:36	141	16	13	none	51.40	0.02	-0.17	0.347	0.419	0.343	0.371
5/29/19	13:36	141	17	11	none	50.50	0.02	0.17	0.337	0.424	0.353	0.373
5/29/19	13:36	141	18	12	none	51.10	0.12	-0.15	0.306	0.376	0.317	0.334
5/29/19	13:36	141	19	13	none	51.40	0.03	-0.16	0.330	0.402	0.336	0.358
5/29/19	13:36	141	20	14	none	51.60	0.38	-0.41	0.347	0.450	0.399	0.401
5/29/19	13:36	141	21	15	none	52.10	0.35	-0.11	0.355	0.481	0.344	0.398
5/29/19	13:36	141	22	13	none	51.40	0.02	-0.15	0.340	0.406	0.349	0.366
5/29/19	13:36	141	23	13	max	51.40	0.18	-0.09	0.390	0.485	0.414	0.432
5/29/19	13:36	141	24	11	max	50.60	0.02	0.16	0.362	0.535	0.398	0.438
5/29/19	13:36	141	25	12	max	51.10	0.14	-0.15	0.346	0.420	0.365	0.378
5/29/19	13:36	141	26	13	max	51.40	0.02	-0.12	0.364	0.477	0.399	0.416
5/29/19	13:36	141	27	14	max	51.60	0.42	-0.40	0.367	0.484	0.414	0.424
5/29/19	13:36	141	28	15	max	52.10	0.36	-0.13	0.362	0.518	0.374	0.424
5/29/19	13:36	141	29	13	max	51.40	0.15	-0.09	0.380	0.491	0.406	0.428
5/29/19	14:18	142	2	13	none	25.70	-0.01	-0.02	0.419	0.492	0.456	0.456
5/29/19	14:18	142	3	11	none	25.40	0.00	0.03	0.460	0.626	0.475	0.526
5/29/19	14:18	142	4	12	none	25.60	-0.05	-0.02	0.405	0.445	0.480	0.444
5/29/19	14:18	142	5	13	none	25.70	0.03	0.01	0.420	0.504	0.462	0.463
5/29/19	14:18	142	6	14	none	25.90	0.17	0.15	0.404	0.472	0.443	0.441

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	14:18	142	7	15	none	26.10	0.19	0.09	0.447	0.645	0.449	0.522
5/29/19	14:18	142	8	13	none	25.70	-0.01	-0.02	0.419	0.499	0.460	0.461
5/29/19	14:18	142	9	13	max	25.70	-0.03	-0.03	0.455	0.525	0.491	0.491
5/29/19	14:18	142	10	11	max	25.40	0.04	0.02	0.484	0.673	0.495	0.558
5/29/19	14:18	142	11	12	max	25.50	-0.02	-0.03	0.439	0.459	0.538	0.481
5/29/19	14:18	142	12	13	max	25.70	0.02	0.00	0.454	0.537	0.481	0.492
5/29/19	14:18	142	13	14	max	25.80	0.19	0.08	0.423	0.479	0.477	0.461
5/29/19	14:18	142	14	15	max	26.00	0.15	0.07	0.462	0.673	0.474	0.545
5/29/19	14:18	142	15	13	max	25.70	-0.03	-0.03	0.455	0.524	0.486	0.489
5/29/19	14:18	142	16	13	none	51.40	0.03	-0.12	0.347	0.396	0.347	0.364
5/29/19	14:18	142	17	11	none	50.50	0.18	0.02	0.340	0.444	0.360	0.384
5/29/19	14:18	142	18	12	none	51.10	0.16	-0.10	0.304	0.376	0.312	0.332
5/29/19	14:18	142	19	13	none	51.40	0.30	-0.13	0.331	0.386	0.335	0.352
5/29/19	14:18	142	20	14	none	51.60	0.42	-0.40	0.334	0.407	0.366	0.370
5/29/19	14:18	142	21	15	none	52.10	0.39	-0.08	0.355	0.478	0.337	0.395
5/29/19	14:18	142	22	13	none	51.40	0.02	-0.11	0.339	0.399	0.338	0.360
5/29/19	14:18	142	23	13	max	51.40	0.03	-0.13	0.359	0.434	0.369	0.389
5/29/19	14:18	142	24	11	max	50.50	0.02	0.02	0.351	0.485	0.375	0.408
5/29/19	14:18	142	25	12	max	51.10	0.15	-0.12	0.311	0.391	0.331	0.346
5/29/19	14:18	142	26	13	max	51.40	0.03	-0.13	0.350	0.435	0.367	0.386
5/29/19	14:18	142	27	14	max	51.60	0.43	-0.41	0.347	0.439	0.385	0.392
5/29/19	14:18	142	28	15	max	52.00	0.37	-0.08	0.354	0.477	0.350	0.398
5/29/19	14:18	142	29	13	max	51.30	0.02	-0.13	0.351	0.431	0.363	0.383
5/29/19	14:55	143	2	13	none	25.70	0.00	-0.01	0.412	0.503	0.451	0.457
5/29/19	14:55	143	3	11	none	25.30	0.01	0.02	0.460	0.654	0.484	0.540
5/29/19	14:55	143	4	12	none	25.50	-0.04	-0.02	0.406	0.429	0.510	0.451
5/29/19	14:55	143	5	13	none	25.70	0.05	0.02	0.415	0.504	0.456	0.460
5/29/19	14:55	143	6	14	none	25.80	0.18	0.15	0.404	0.456	0.462	0.442

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	14:55	143	7	15	none	26.10	0.17	0.10	0.447	0.653	0.467	0.531
5/29/19	14:55	143	8	13	none	25.70	0.00	-0.01	0.419	0.499	0.457	0.459
5/29/19	14:55	143	9	13	max	25.70	-0.01	-0.03	0.455	0.528	0.493	0.493
5/29/19	14:55	143	10	11	max	25.30	0.03	0.02	0.490	0.695	0.514	0.574
5/29/19	14:55	143	11	12	max	25.50	-0.02	-0.19	0.440	0.476	0.547	0.489
5/29/19	14:55	143	12	13	max	25.70	0.03	0.02	0.451	0.545	0.489	0.496
5/29/19	14:55	143	13	14	max	25.80	0.02	0.08	0.441	0.491	0.488	0.474
5/29/19	14:55	143	14	15	max	26.10	0.14	0.07	0.467	0.687	0.471	0.551
5/29/19	14:55	143	15	13	max	25.70	-0.01	-0.01	0.465	0.535	0.498	0.500
5/29/19	14:55	143	16	13	none	51.30	0.03	-0.14	0.351	0.410	0.349	0.371
5/29/19	14:55	143	17	11	none	50.50	0.17	0.18	0.335	0.449	0.362	0.385
5/29/19	14:55	143	18	12	none	51.00	0.15	-0.11	0.303	0.380	0.315	0.334
5/29/19	14:55	143	19	13	none	51.40	0.32	-0.16	0.335	0.390	0.339	0.356
5/29/19	14:55	143	20	14	none	51.60	0.43	-0.44	0.333	0.414	0.370	0.374
5/29/19	14:55	143	21	15	none	52.00	0.44	-0.12	0.347	0.466	0.338	0.388
5/29/19	14:55	143	22	13	none	51.40	0.30	-0.13	0.347	0.413	0.353	0.372
5/29/19	14:55	143	23	13	max	51.40	0.03	-0.13	0.357	0.432	0.367	0.387
5/29/19	14:55	143	24	11	max	50.50	0.02	0.18	0.347	0.474	0.373	0.402
5/29/19	14:55	143	25	12	max	51.10	0.19	-0.14	0.313	0.380	0.325	0.341
5/29/19	14:55	143	26	13	max	51.40	0.32	-0.14	0.350	0.434	0.370	0.386
5/29/19	14:55	143	27	14	max	51.60	0.44	-0.42	0.345	0.445	0.393	0.396
5/29/19	14:55	143	28	15	max	52.00	0.44	-0.09	0.360	0.510	0.366	0.418
5/29/19	14:55	143	29	13	max	51.40	0.03	-0.11	0.369	0.448	0.389	0.403
5/29/19	15:39	144	2	13	none	25.70	0.02	-0.01	0.414	0.507	0.456	0.460
5/29/19	15:39	144	3	11	none	25.30	0.03	0.00	0.453	0.627	0.477	0.525
5/29/19	15:39	144	4	12	none	25.50	-0.03	-0.15	0.408	0.454	0.490	0.452
5/29/19	15:39	144	5	13	none	25.70	0.05	0.02	0.417	0.513	0.461	0.465
5/29/19	15:39	144	6	14	none	25.80	0.19	0.15	0.412	0.453	0.461	0.442

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/29/19	15:39	144	7	15	none	26.10	0.02	0.11	0.456	0.671	0.454	0.537
5/29/19	15:39	144	8	13	none	25.70	0.03	0.00	0.414	0.496	0.458	0.457
5/29/19	15:39	144	9	13	max	25.60	0.01	-0.04	0.438	0.536	0.495	0.492
5/29/19	15:39	144	10	11	max	25.30	0.04	0.03	0.476	0.665	0.516	0.558
5/29/19	15:39	144	11	12	max	25.50	-0.02	-0.12	0.436	0.500	0.523	0.488
5/29/19	15:39	144	12	13	max	25.60	0.05	-0.02	0.472	0.546	0.508	0.509
5/29/19	15:39	144	13	14	max	25.80	0.02	0.06	0.430	0.494	0.496	0.475
5/29/19	15:39	144	14	15	max	26.00	0.14	0.06	0.461	0.678	0.472	0.546
5/29/19	15:39	144	15	13	max	25.60	0.00	-0.02	0.455	0.540	0.511	0.503
5/29/19	15:39	144	16	13	none	51.30	0.31	-0.14	0.344	0.400	0.353	0.366
5/29/19	15:39	144	17	11	none	50.50	0.03	0.18	0.339	0.475	0.358	0.396
5/29/19	15:39	144	18	12	none	51.00	0.15	-0.02	0.314	0.381	0.362	0.353
5/29/19	15:39	144	19	13	none	51.40	0.34	-0.14	0.326	0.394	0.332	0.352
5/29/19	15:39	144	20	14	none	51.50	0.45	-0.42	0.333	0.419	0.362	0.373
5/29/19	15:39	144	21	15	none	52.00	0.42	-0.12	0.348	0.468	0.337	0.389
5/29/19	15:39	144	22	13	none	51.30	0.31	-0.13	0.349	0.385	0.351	0.362
5/29/19	15:39	144	23	13	max	51.30	0.03	-0.12	0.363	0.437	0.385	0.396
5/29/19	15:39	144	24	11	max	50.50	0.02	0.18	0.353	0.494	0.385	0.415
5/29/19	15:39	144	25	12	max	51.00	0.17	-0.03	0.324	0.397	0.366	0.364
5/29/19	15:39	144	26	13	max	51.40	0.32	-0.13	0.352	0.437	0.372	0.389
5/29/19	15:39	144	27	14	max	51.50	0.45	-0.40	0.346	0.456	0.398	0.403
5/29/19	15:39	144	28	15	max	52.00	0.40	-0.09	0.355	0.501	0.365	0.412
5/29/19	15:39	144	29	13	max	51.30	0.02	-0.10	0.377	0.446	0.384	0.404
5/30/19	8:25	145	2	13	none	25.70	0.01	0.03	0.418	0.492	0.463	0.459
5/30/19	8:25	145	3	11	none	25.30	0.03	0.08	0.454	0.632	0.458	0.521
5/30/19	8:25	145	4	12	none	25.50	-0.01	-0.18	0.408	0.449	0.474	0.444
5/30/19	8:25	145	5	13	none	25.70	0.06	0.03	0.414	0.504	0.463	0.462
5/30/19	8:25	145	6	14	none	25.80	0.02	0.17	0.404	0.462	0.443	0.437

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	8:25	145	7	15	none	26.00	0.15	0.10	0.459	0.622	0.472	0.523
5/30/19	8:25	145	8	13	none	25.70	0.02	0.00	0.411	0.483	0.453	0.450
5/30/19	8:25	145	9	13	max	25.80	0.00	-0.02	0.446	0.518	0.484	0.484
5/30/19	8:25	145	10	11	max	25.40	0.06	0.06	0.503	0.693	0.491	0.570
5/30/19	8:25	145	11	12	max	25.60	0.00	-0.02	0.448	0.458	0.534	0.482
5/30/19	8:25	145	12	13	max	25.80	0.03	0.02	0.447	0.529	0.477	0.486
5/30/19	8:25	145	13	14	max	25.90	0.02	0.12	0.433	0.484	0.471	0.463
5/30/19	8:25	145	14	15	max	26.10	0.19	0.13	0.464	0.643	0.478	0.535
5/30/19	8:25	145	15	13	max	25.70	-0.01	-0.01	0.440	0.518	0.477	0.479
5/30/19	8:25	145	16	13	none	51.40	0.34	-0.10	0.349	0.400	0.352	0.368
5/30/19	8:25	145	17	11	none	50.50	0.03	0.03	0.335	0.435	0.356	0.378
5/30/19	8:25	145	18	12	none	51.10	0.19	-0.12	0.309	0.390	0.341	0.348
5/30/19	8:25	145	19	13	none	51.40	0.35	-0.11	0.330	0.395	0.342	0.357
5/30/19	8:25	145	20	14	none	51.60	0.53	-0.40	0.338	0.430	0.369	0.381
5/30/19	8:25	145	21	15	none	52.10	0.47	-0.12	0.352	0.481	0.350	0.399
5/30/19	8:25	145	22	13	none	51.40	0.31	-0.15	0.348	0.388	0.352	0.363
5/30/19	8:25	145	23	13	max	51.40	0.03	-0.19	0.352	0.424	0.362	0.381
5/30/19	8:25	145	24	11	max	50.60	0.03	0.02	0.351	0.485	0.368	0.406
5/30/19	8:25	145	25	12	max	51.10	0.02	-0.14	0.313	0.391	0.326	0.345
5/30/19	8:25	145	26	13	max	51.40	0.32	-0.18	0.332	0.426	0.355	0.373
5/30/19	8:25	145	27	14	max	51.60	0.47	-0.45	0.342	0.430	0.384	0.387
5/30/19	8:25	145	28	15	max	52.10	0.45	-0.12	0.357	0.487	0.351	0.403
5/30/19	8:25	145	29	13	max	51.40	0.03	-0.18	0.361	0.429	0.369	0.388
5/30/19	9:15	146	2	13	none	25.70	0.00	0.00	0.412	0.478	0.456	0.449
5/30/19	9:15	146	3	11	none	25.30	0.02	0.05	0.444	0.606	0.475	0.513
5/30/19	9:15	146	4	12	none	25.50	-0.01	-0.02	0.406	0.449	0.468	0.442
5/30/19	9:15	146	5	13	none	25.70	0.05	0.06	0.412	0.496	0.453	0.455
5/30/19	9:15	146	6	14	none	25.80	0.19	0.18	0.407	0.453	0.449	0.437

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	9:15	146	7	15	none	26.10	0.02	0.14	0.450	0.615	0.463	0.515
5/30/19	9:15	146	8	13	none	25.70	-0.02	0.01	0.406	0.480	0.443	0.444
5/30/19	9:15	146	9	13	max	25.70	-0.01	-0.03	0.439	0.524	0.479	0.482
5/30/19	9:15	146	10	11	max	25.40	0.04	0.05	0.494	0.684	0.501	0.566
5/30/19	9:15	146	11	12	max	25.50	0.01	-0.03	0.444	0.458	0.541	0.483
5/30/19	9:15	146	12	13	max	25.70	0.05	0.04	0.449	0.534	0.488	0.492
5/30/19	9:15	146	13	14	max	25.80	0.02	0.10	0.432	0.504	0.483	0.474
5/30/19	9:15	146	14	15	max	26.00	0.19	0.11	0.462	0.661	0.476	0.541
5/30/19	9:15	146	15	13	max	25.60	-0.02	-0.02	0.440	0.524	0.482	0.483
5/30/19	9:15	146	16	13	none	51.30	0.03	-0.17	0.338	0.382	0.345	0.356
5/30/19	9:15	146	17	11	none	50.50	0.03	0.02	0.335	0.428	0.352	0.374
5/30/19	9:15	146	18	12	none	51.10	0.02	-0.12	0.309	0.383	0.305	0.334
5/30/19	9:15	146	19	13	none	51.40	0.36	-0.17	0.320	0.392	0.336	0.351
5/30/19	9:15	146	20	14	none	51.50	0.44	-0.41	0.334	0.407	0.371	0.372
5/30/19	9:15	146	21	15	none	52.10	0.44	-0.13	0.357	0.473	0.342	0.395
5/30/19	9:15	146	22	13	none	51.40	0.03	-0.17	0.344	0.389	0.344	0.360
5/30/19	9:15	146	23	13	max	51.30	0.03	-0.16	0.352	0.432	0.368	0.386
5/30/19	9:15	146	24	11	max	50.50	0.02	0.02	0.348	0.486	0.379	0.408
5/30/19	9:15	146	25	12	max	51.00	0.02	-0.13	0.318	0.396	0.328	0.349
5/30/19	9:15	146	26	13	max	51.30	0.34	-0.18	0.332	0.428	0.362	0.376
5/30/19	9:15	146	27	14	max	51.50	0.49	-0.44	0.348	0.450	0.384	0.396
5/30/19	9:15	146	28	15	max	52.00	0.45	-0.12	0.365	0.489	0.358	0.409
5/30/19	9:15	146	29	13	max	51.30	0.03	-0.16	0.365	0.435	0.376	0.393
5/30/19	9:50	148	2	13	none	25.60	0.00	-0.01	0.420	0.495	0.457	0.458
5/30/19	9:50	148	3	11	none	25.30	0.03	0.06	0.455	0.628	0.468	0.523
5/30/19	9:50	148	4	12	none	25.50	-0.01	-0.02	0.407	0.445	0.484	0.446
5/30/19	9:50	148	5	13	none	25.60	0.06	0.04	0.419	0.508	0.458	0.463
5/30/19	9:50	148	6	14	none	25.80	0.02	0.15	0.408	0.469	0.446	0.442

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	9:50	148	7	15	none	26.00	0.18	0.11	0.453	0.638	0.470	0.527
5/30/19	9:50	148	8	13	none	25.60	-0.01	0.00	0.412	0.483	0.450	0.450
5/30/19	9:50	148	9	13	max	25.60	0.00	-0.03	0.464	0.522	0.494	0.494
5/30/19	9:50	148	10	11	max	25.30	0.02	0.05	0.474	0.673	0.513	0.560
5/30/19	9:50	148	11	12	max	25.50	-0.01	-0.02	0.442	0.489	0.521	0.485
5/30/19	9:50	148	12	13	max	25.60	0.07	0.01	0.439	0.541	0.485	0.490
5/30/19	9:50	148	13	14	max	25.80	0.02	0.10	0.426	0.522	0.492	0.482
5/30/19	9:50	148	14	15	max	26.00	0.02	0.13	0.473	0.696	0.492	0.563
5/30/19	9:50	148	15	13	max	25.60	-0.01	-0.04	0.432	0.523	0.488	0.482
5/30/19	9:50	148	16	13	none	51.30	0.33	-0.15	0.344	0.403	0.348	0.366
5/30/19	9:50	148	17	11	none	50.50	0.03	0.02	0.336	0.439	0.363	0.382
5/30/19	9:50	148	18	12	none	51.00	0.19	-0.10	0.305	0.386	0.310	0.336
5/30/19	9:50	148	19	13	none	51.30	0.35	-0.14	0.317	0.399	0.335	0.352
5/30/19	9:50	148	20	14	none	51.50	0.49	-0.42	0.331	0.411	0.363	0.370
5/30/19	9:50	148	21	15	none	52.00	0.50	-0.12	0.365	0.473	0.355	0.401
5/30/19	9:50	148	22	13	none	51.30	0.03	-0.14	0.348	0.399	0.351	0.367
5/30/19	9:50	148	23	13	max	51.30	0.03	-0.16	0.354	0.437	0.371	0.389
5/30/19	9:50	148	24	11	max	50.50	0.02	0.02	0.348	0.504	0.385	0.418
5/30/19	9:50	148	25	12	max	51.00	0.02	-0.12	0.321	0.396	0.333	0.352
5/30/19	9:50	148	26	13	max	51.30	0.32	-0.14	0.346	0.445	0.374	0.391
5/30/19	9:50	148	27	14	max	51.50	0.48	-0.43	0.340	0.464	0.394	0.402
5/30/19	9:50	148	28	15	max	52.00	0.49	-0.11	0.365	0.508	0.376	0.421
5/30/19	9:50	148	29	13	max	51.30	0.03	-0.14	0.377	0.443	0.386	0.403
5/30/19	10:34	149	2	13	none	25.70	-0.01	-0.01	0.413	0.487	0.449	0.451
5/30/19	10:34	149	3	11	none	25.40	0.03	0.08	0.454	0.613	0.478	0.520
5/30/19	10:34	149	4	12	none	25.50	-0.03	-0.02	0.408	0.423	0.505	0.447
5/30/19	10:34	149	5	13	none	25.70	0.04	0.05	0.410	0.512	0.442	0.457
5/30/19	10:34	149	6	14	none	25.80	0.19	0.16	0.404	0.456	0.446	0.436

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	10:34	149	7	15	none	26.10	0.02	0.12	0.456	0.637	0.486	0.532
5/30/19	10:34	149	8	13	none	25.70	-0.01	-0.02	0.416	0.497	0.453	0.456
5/30/19	10:34	149	9	13	max	25.70	-0.02	-0.05	0.445	0.513	0.477	0.479
5/30/19	10:34	149	10	11	max	25.40	0.05	0.05	0.517	0.671	0.503	0.569
5/30/19	10:34	149	11	12	max	25.50	0.00	-0.03	0.472	0.461	0.564	0.501
5/30/19	10:34	149	12	13	max	25.70	0.02	-0.03	0.454	0.524	0.480	0.487
5/30/19	10:34	149	13	14	max	25.80	0.19	0.08	0.429	0.487	0.472	0.463
5/30/19	10:34	149	14	15	max	26.10	0.19	0.11	0.473	0.645	0.478	0.538
5/30/19	10:34	149	15	13	max	25.70	-0.03	-0.05	0.451	0.516	0.475	0.482
5/30/19	10:34	149	16	13	none	51.40	0.32	-0.18	0.337	0.408	0.338	0.362
5/30/19	10:34	149	17	11	none	50.60	0.02	0.03	0.339	0.432	0.365	0.381
5/30/19	10:34	149	18	12	none	51.10	0.02	-0.10	0.306	0.379	0.301	0.331
5/30/19	10:34	149	19	13	none	51.40	0.35	-0.18	0.321	0.386	0.334	0.348
5/30/19	10:34	149	20	14	none	51.60	0.43	-0.43	0.335	0.404	0.377	0.373
5/30/19	10:34	149	21	15	none	52.10	0.45	-0.13	0.354	0.482	0.338	0.397
5/30/19	10:34	149	22	13	none	51.40	0.02	-0.13	0.356	0.415	0.351	0.375
5/30/19	10:34	149	23	13	max	51.40	0.03	-0.17	0.351	0.423	0.363	0.380
5/30/19	10:34	149	24	11	max	50.60	0.03	0.02	0.350	0.469	0.373	0.401
5/30/19	10:34	149	25	12	max	51.10	0.02	-0.13	0.312	0.383	0.329	0.343
5/30/19	10:34	149	26	13	max	51.40	0.32	-0.17	0.331	0.424	0.351	0.371
5/30/19	10:34	149	27	14	max	51.60	0.46	-0.46	0.346	0.440	0.377	0.390
5/30/19	10:34	149	28	15	max	52.10	0.45	-0.12	0.357	0.480	0.348	0.399
5/30/19	10:34	149	29	13	max	51.40	0.03	-0.17	0.358	0.424	0.364	0.383
5/30/19	11:15	150	2	13	none	25.70	-0.01	0.01	0.408	0.496	0.443	0.451
5/30/19	11:15	150	3	11	none	25.40	0.01	0.08	0.456	0.631	0.474	0.526
5/30/19	11:15	150	4	12	none	25.50	0.01	-0.15	0.424	0.463	0.519	0.470
5/30/19	11:15	150	5	13	none	25.70	0.03	0.01	0.424	0.515	0.463	0.469
5/30/19	11:15	150	6	14	none	25.80	0.02	0.15	0.408	0.474	0.445	0.443

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	11:15	150	7	15	none	26.10	0.19	0.10	0.448	0.609	0.472	0.515
5/30/19	11:15	150	8	13	none	25.70	-0.02	-0.01	0.421	0.494	0.451	0.456
5/30/19	11:15	150	9	13	max	25.70	-0.02	-0.04	0.439	0.517	0.476	0.478
5/30/19	11:15	150	10	11	max	25.40	0.06	0.05	0.506	0.671	0.502	0.565
5/30/19	11:15	150	11	12	max	25.50	0.00	-0.03	0.442	0.453	0.548	0.483
5/30/19	11:15	150	12	13	max	25.70	0.02	-0.01	0.442	0.523	0.477	0.482
5/30/19	11:15	150	13	14	max	25.80	0.02	0.09	0.417	0.484	0.470	0.458
5/30/19	11:15	150	14	15	max	26.00	0.19	0.10	0.461	0.642	0.475	0.532
5/30/19	11:15	150	15	13	max	25.70	-0.03	-0.04	0.442	0.517	0.474	0.479
5/30/19	11:15	150	16	13	none	51.40	0.03	-0.14	0.339	0.399	0.347	0.363
5/30/19	11:15	150	17	11	none	50.50	0.37	0.03	0.336	0.425	0.358	0.375
5/30/19	11:15	150	18	12	none	51.10	0.02	-0.09	0.308	0.372	0.309	0.331
5/30/19	11:15	150	19	13	none	51.40	0.33	-0.15	0.321	0.388	0.332	0.348
5/30/19	11:15	150	20	14	none	51.60	0.43	-0.44	0.338	0.405	0.375	0.374
5/30/19	11:15	150	21	15	none	52.10	0.46	-0.10	0.355	0.481	0.341	0.397
5/30/19	11:15	150	22	13	none	51.40	0.03	-0.13	0.350	0.405	0.351	0.369
5/30/19	11:15	150	23	13	max	51.40	0.03	-0.16	0.350	0.423	0.357	0.378
5/30/19	11:15	150	24	11	max	50.50	0.03	0.02	0.350	0.476	0.374	0.404
5/30/19	11:15	150	25	12	max	51.10	0.02	-0.11	0.317	0.386	0.321	0.343
5/30/19	11:15	150	26	13	max	51.40	0.33	-0.15	0.329	0.419	0.347	0.367
5/30/19	11:15	150	27	14	max	51.60	0.46	-0.44	0.342	0.428	0.375	0.383
5/30/19	11:15	150	28	15	max	52.10	0.45	-0.09	0.358	0.489	0.345	0.403
5/30/19	11:15	150	29	13	max	51.40	0.03	-0.15	0.352	0.420	0.354	0.377
5/30/19	12:50	151	2	13	none	25.70	-0.01	-0.01	0.430	0.512	0.476	0.474
5/30/19	12:50	151	3	11	none	25.40	0.04	0.06	0.457	0.609	0.492	0.524
5/30/19	12:50	151	4	12	none	25.60	0.00	-0.14	0.403	0.451	0.475	0.444
5/30/19	12:50	151	5	13	none	25.70	0.05	0.00	0.419	0.506	0.458	0.462
5/30/19	12:50	151	6	14	none	25.90	0.02	0.14	0.407	0.491	0.434	0.445

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	12:50	151	7	15	none	26.10	0.02	0.13	0.452	0.657	0.466	0.533
5/30/19	12:50	151	8	13	none	25.70	0.00	-0.01	0.416	0.487	0.447	0.451
5/30/19	12:50	151	9	13	max	25.70	-0.02	-0.02	0.443	0.514	0.483	0.481
5/30/19	12:50	151	10	11	max	25.30	0.07	0.05	0.478	0.653	0.503	0.550
5/30/19	12:50	151	11	12	max	25.50	0.00	-0.02	0.429	0.446	0.537	0.473
5/30/19	12:50	151	12	13	max	25.70	0.02	0.00	0.438	0.520	0.480	0.481
5/30/19	12:50	151	13	14	max	25.80	0.02	0.09	0.414	0.481	0.466	0.455
5/30/19	12:50	151	14	15	max	26.00	0.02	0.10	0.458	0.650	0.471	0.534
5/30/19	12:50	151	15	13	max	25.60	-0.02	-0.02	0.443	0.519	0.484	0.483
5/30/19	12:50	151	16	13	none	51.40	0.31	-0.11	0.338	0.418	0.341	0.367
5/30/19	12:50	151	17	11	none	50.50	0.03	0.03	0.337	0.439	0.366	0.383
5/30/19	12:50	151	18	12	none	51.10	0.02	-0.09	0.307	0.380	0.308	0.333
5/30/19	12:50	151	19	13	none	51.40	0.37	-0.14	0.320	0.393	0.330	0.349
5/30/19	12:50	151	20	14	none	51.60	0.45	-0.42	0.329	0.400	0.370	0.368
5/30/19	12:50	151	21	15	none	52.10	0.40	-0.07	0.353	0.490	0.332	0.398
5/30/19	12:50	151	22	13	none	51.40	0.03	-0.13	0.349	0.405	0.342	0.367
5/30/19	12:50	151	23	13	max	51.40	0.03	-0.15	0.363	0.424	0.362	0.384
5/30/19	12:50	151	24	11	max	50.50	0.02	0.02	0.348	0.463	0.377	0.399
5/30/19	12:50	151	25	12	max	51.10	0.02	-0.11	0.312	0.385	0.322	0.341
5/30/19	12:50	151	26	13	max	51.40	0.34	-0.15	0.332	0.421	0.349	0.369
5/30/19	12:50	151	27	14	max	51.60	0.47	-0.43	0.339	0.430	0.372	0.382
5/30/19	12:50	151	28	15	max	52.00	0.46	-0.08	0.354	0.489	0.346	0.401
5/30/19	12:50	151	29	13	max	51.40	0.03	-0.14	0.347	0.426	0.356	0.378
5/30/19	13:31	152	2	13	none	25.70	0.00	0.00	0.418	0.504	0.461	0.462
5/30/19	13:31	152	3	1	none	25.20	0.33	0.34	0.498	0.819	0.431	0.607
5/30/19	13:31	152	4	2	none	25.40	0.14	-0.03	0.338	0.349	0.487	0.397
5/30/19	13:31	152	5	3	none	25.60	0.64	0.02	0.341	0.493	0.403	0.417
5/30/19	13:31	152	6	4	none	25.70	0.56	0.46	0.335	0.392	0.448	0.394

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	13:31	152	7	5	none	25.90	0.16	0.12	0.423	0.510	0.475	0.471
5/30/19	13:31	152	8	6	none	25.30	0.18	0.17	0.359	0.433	0.458	0.419
5/30/19	13:31	152	9	7	none	25.50	-0.05	-0.12	0.367	0.475	0.430	0.426
5/30/19	13:31	152	10	8	none	25.60	0.39	0.14	0.337	0.477	0.396	0.408
5/30/19	13:31	152	11	9	none	25.80	0.02	-0.05	0.419	0.512	0.451	0.462
5/30/19	13:31	152	12	10	none	25.90	0.68	-0.02	0.358	0.414	0.490	0.424
5/30/19	13:31	152	13	11	none	25.40	0.02	0.07	0.459	0.630	0.492	0.532
5/30/19	13:31	152	14	12	none	25.50	-0.01	-0.02	0.412	0.456	0.506	0.459
5/30/19	13:31	152	15	13	none	25.70	0.02	0.00	0.425	0.518	0.475	0.474
5/30/19	13:31	152	16	14	none	25.80	0.19	0.14	0.408	0.468	0.450	0.443
5/30/19	13:31	152	17	15	none	26.10	0.13	0.09	0.460	0.666	0.475	0.542
5/30/19	13:31	152	18	16	none	25.40	0.10	0.02	0.401	0.553	0.409	0.460
5/30/19	13:31	152	19	17	none	25.50	-0.03	0.10	0.347	0.431	0.400	0.394
5/30/19	13:31	152	20	18	none	25.70	0.07	0.03	0.366	0.487	0.403	0.422
5/30/19	13:31	152	21	19	none	25.80	0.10	0.09	0.348	0.414	0.408	0.391
5/30/19	13:31	152	22	20	none	26.00	-0.16	-0.11	0.332	0.444	0.378	0.387
5/30/19	13:31	152	23	21	none	25.40	0.15	0.03	0.387	0.523	0.471	0.464
5/30/19	13:31	152	24	22	none	25.50	0.08	-0.36	0.383	0.517	0.484	0.465
5/30/19	13:31	152	25	23	none	25.70	-0.03	0.03	0.351	0.413	0.428	0.399
5/30/19	13:31	152	26	24	none	25.80	-0.08	0.65	0.382	0.394	0.502	0.429
5/30/19	13:31	152	27	25	none	26.00	0.05	-0.30	0.466	0.667	0.492	0.549
5/30/19	13:31	152	28	13	none	25.70	0.06	0.02	0.417	0.505	0.457	0.461
5/30/19	13:59	153	2	13	max	25.70	0.02	-0.01	0.438	0.525	0.480	0.482
5/30/19	13:59	153	3	1	max	25.20	0.03	0.03	0.465	0.753	0.448	0.573
5/30/19	13:59	153	4	2	max	25.40	0.16	-0.03	0.352	0.353	0.505	0.410
5/30/19	13:59	153	5	3	max	25.50	0.65	0.04	0.370	0.531	0.409	0.442
5/30/19	13:59	153	6	4	max	25.60	0.58	0.45	0.360	0.444	0.454	0.421
5/30/19	13:59	153	7	5	max	25.90	0.02	0.12	0.426	0.524	0.466	0.474

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	13:59	153	8	6	max	25.30	0.02	0.16	0.364	0.453	0.438	0.420
5/30/19	13:59	153	9	7	max	25.50	-0.03	-0.16	0.364	0.393	0.453	0.405
5/30/19	13:59	153	10	8	max	25.60	0.39	0.17	0.358	0.498	0.398	0.422
5/30/19	13:59	153	11	9	max	25.70	0.03	-0.09	0.435	0.520	0.507	0.489
5/30/19	13:59	153	12	10	max	25.80	0.66	-0.02	0.355	0.448	0.479	0.430
5/30/19	13:59	153	13	11	max	25.30	0.06	0.05	0.477	0.650	0.495	0.546
5/30/19	13:59	153	14	12	max	25.50	0.01	-0.30	0.443	0.438	0.553	0.481
5/30/19	13:59	153	15	13	max	25.60	0.01	0.01	0.439	0.526	0.478	0.482
5/30/19	13:59	153	16	14	max	25.70	0.02	0.10	0.416	0.481	0.473	0.458
5/30/19	13:59	153	17	15	max	26.00	0.18	0.11	0.456	0.651	0.481	0.537
5/30/19	13:59	153	18	16	max	25.40	0.09	0.02	0.392	0.529	0.392	0.442
5/30/19	13:59	153	19	17	max	25.40	-0.03	0.09	0.379	0.490	0.419	0.432
5/30/19	13:59	153	20	18	max	25.70	0.06	-0.01	0.358	0.427	0.414	0.401
5/30/19	13:59	153	21	19	max	25.70	0.10	0.09	0.367	0.455	0.401	0.409
5/30/19	13:59	153	22	20	max	25.90	-0.15	-0.08	0.362	0.479	0.407	0.419
5/30/19	13:59	153	23	21	max	25.30	0.15	0.03	0.390	0.496	0.474	0.456
5/30/19	13:59	153	24	22	max	25.50	0.09	-0.35	0.408	0.535	0.506	0.486
5/30/19	13:59	153	25	23	max	25.60	-0.03	0.03	0.372	0.436	0.440	0.417
5/30/19	13:59	153	26	24	max	25.70	-0.08	0.68	0.400	0.417	0.507	0.444
5/30/19	13:59	153	27	25	max	26.00	0.08	-0.03	0.466	0.635	0.473	0.530
5/30/19	13:59	153	28	13	max	25.60	0.04	0.00	0.437	0.529	0.476	0.482
5/30/19	14:23	154	2	13	max	51.40	0.33	-0.14	0.341	0.421	0.353	0.373
5/30/19	14:23	154	3	1	max	50.30	0.53	0.50	0.554	0.923	0.489	0.683
5/30/19	14:23	154	4	2	max	50.70	0.54	-0.03	0.336	0.454	0.370	0.390
5/30/19	14:23	154	5	3	max	51.00	1.49	-0.02	0.391	0.448	0.467	0.436
5/30/19	14:23	154	6	4	max	51.30	1.41	0.43	0.316	0.371	0.382	0.357
5/30/19	14:23	154	7	5	max	51.60	0.91	-0.15	0.411	0.435	0.499	0.450
5/30/19	14:23	154	8	6	max	50.50	0.18	0.02	0.365	0.469	0.404	0.415

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
5/30/19	14:23	154	9	7	max	50.90	0.02	-0.34	0.028	0.352	0.315	0.318
5/30/19	14:23	154	10	8	max	51.20	0.85	0.09	0.029	0.440	0.313	0.354
5/30/19	14:23	154	11	9	max	51.40	1.14	-0.03	0.308	0.428	0.335	0.361
5/30/19	14:23	154	12	10	max	51.80	0.78	-0.33	0.030	0.380	0.329	0.337
5/30/19	14:23	154	13	11	max	50.50	0.02	0.03	0.345	0.457	0.376	0.395
5/30/19	14:23	154	14	12	max	51.00	0.02	-0.14	0.311	0.385	0.324	0.341
5/30/19	14:23	154	15	13	max	51.30	0.34	-0.14	0.329	0.422	0.349	0.368
5/30/19	14:23	154	16	14	max	51.50	0.44	-0.41	0.336	0.424	0.372	0.379
5/30/19	14:23	154	17	15	max	52.00	0.46	-0.10	0.346	0.476	0.338	0.392
5/30/19	14:23	154	18	16	max	50.60	0.37	0.49	0.368	0.525	0.392	0.434
5/30/19	14:23	154	19	17	max	50.90	-0.02	0.02	0.303	0.419	0.377	0.370
5/30/19	14:23	154	20	18	max	51.30	0.10	-0.08	0.027	0.344	0.029	0.302
5/30/19	14:23	154	21	19	max	51.50	0.10	0.05	0.029	0.330	0.304	0.308
5/30/19	14:23	154	22	20	max	51.90	0.36	0.03	0.030	0.367	0.334	0.334
5/30/19	14:23	154	23	21	max	50.60	0.38	0.48	0.350	0.569	0.371	0.441
5/30/19	14:23	154	24	22	max	50.90	0.16	-0.48	0.309	0.438	0.338	0.366
5/30/19	14:23	154	25	23	max	51.20	0.01	0.17	0.335	0.442	0.382	0.389
5/30/19	14:23	154	26	24	max	51.40	0.07	1.07	0.362	0.460	0.395	0.408
5/30/19	14:23	154	27	25	max	51.80	0.03	-0.03	0.471	0.576	0.569	0.541
5/30/19	14:23	154	28	13	max	51.30	0.43	-0.09	0.329	0.422	0.346	0.368
6/3/19	9:33	155	2	13	max	51.40	0.33	-0.11	0.347	0.422	0.350	0.374
6/3/19	9:33	155	3	1	max	50.02	0.60	0.51	0.568	0.948	0.494	0.699
6/3/19	9:33	155	4	2	max	50.70	0.58	-0.16	0.336	0.466	0.363	0.392
6/3/19	9:33	155	5	3	max	50.90	1.56	-0.15	0.416	0.480	0.470	0.456
6/3/19	9:33	155	6	4	max	51.20	1.51	0.48	0.326	0.375	0.393	0.365
6/3/19	9:33	155	7	5	max	51.60	0.98	-0.19	0.417	0.458	0.491	0.456
6/3/19	9:33	155	8	6	max	50.40	0.35	0.03	0.375	0.466	0.401	0.416
6/3/19	9:33	155	9	7	max	50.80	0.41	-0.14	0.029	0.359	0.029	0.314

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	9:33	155	10	8	max	51.10	1.08	0.18	0.029	0.433	0.312	0.352
6/3/19	9:33	155	11	9	max	51.30	1.38	-0.02	0.305	0.416	0.324	0.352
6/3/19	9:33	155	12	10	max	51.60	1.01	-0.03	0.304	0.377	0.335	0.340
6/3/19	9:33	155	13	11	max	50.40	0.42	0.32	0.347	0.458	0.377	0.397
6/3/19	9:33	155	14	12	max	50.90	0.39	-0.06	0.312	0.386	0.319	0.341
6/3/19	9:33	155	15	13	max	51.20	0.54	-0.07	0.332	0.429	0.343	0.370
6/3/19	9:33	155	16	14	max	51.40	0.66	-0.34	0.341	0.430	0.366	0.381
6/3/19	9:33	155	17	15	max	51.90	0.67	-0.03	0.366	0.492	0.346	0.407
6/3/19	9:33	155	18	16	max	50.50	0.54	0.56	0.360	0.511	0.376	0.421
6/3/19	9:33	155	19	17	max	50.80	0.00	0.02	0.304	0.400	0.387	0.366
6/3/19	9:33	155	20	18	max	51.20	0.03	-0.03	0.028	0.350	0.029	0.306
6/3/19	9:33	155	21	19	max	51.40	0.31	0.08	0.029	0.329	0.309	0.309
6/3/19	9:33	155	22	20	max	51.80	0.55	0.05	0.030	0.362	0.340	0.335
6/3/19	9:33	155	23	21	max	50.50	0.58	0.53	0.358	0.577	0.367	0.446
6/3/19	9:33	155	24	22	max	50.80	0.35	-0.45	0.308	0.445	0.328	0.365
6/3/19	9:33	155	25	23	max	51.10	0.02	0.02	0.343	0.449	0.377	0.392
6/3/19	9:33	155	26	24	max	51.30	0.02	1.13	0.363	0.475	0.383	0.410
6/3/19	9:33	155	27	25	max	51.60	0.50	-0.03	0.478	0.590	0.565	0.546
6/3/19	9:33	155	28	13	max	51.20	0.62	-0.05	0.330	0.428	0.345	0.370
6/3/19	10:06	156	2	13	none	51.40	0.46	-0.07	0.327	0.385	0.324	0.347
6/3/19	10:06	156	3	1	none	50.30	0.69	0.61	0.603	0.981	0.499	0.725
6/3/19	10:06	156	4	2	none	50.70	0.70	-0.16	0.338	0.465	0.360	0.392
6/3/19	10:06	156	5	3	none	51.00	1.65	-0.08	0.398	0.432	0.480	0.438
6/3/19	10:06	156	6	4	none	51.20	1.56	0.51	0.322	0.381	0.386	0.364
6/3/19	10:06	156	7	5	none	51.60	1.13	-0.15	0.433	0.442	0.506	0.462
6/3/19	10:06	156	8	6	none	50.50	0.30	0.30	0.379	0.445	0.422	0.416
6/3/19	10:06	156	9	7	none	50.90	0.36	-0.02	0.029	0.353	0.302	0.316
6/3/19	10:06	156	10	8	none	51.20	0.85	0.15	0.030	0.404	0.315	0.342

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	10:06	156	11	9	none	51.40	1.36	-0.02	0.323	0.409	0.332	0.357
6/3/19	10:06	156	12	10	none	51.80	1.06	-0.34	0.030	0.377	0.311	0.330
6/3/19	10:06	156	13	11	none	50.50	0.42	0.32	0.335	0.421	0.363	0.375
6/3/19	10:06	156	14	12	none	51.00	0.32	-0.05	0.305	0.380	0.305	0.332
6/3/19	10:06	156	15	13	none	51.30	0.50	-0.04	0.318	0.401	0.326	0.350
6/3/19	10:06	156	16	14	none	51.50	0.57	-0.35	0.332	0.410	0.355	0.367
6/3/19	10:06	156	17	15	none	52.00	0.61	-0.07	0.339	0.476	0.337	0.389
6/3/19	10:06	156	18	16	none	50.60	0.55	0.52	0.384	0.516	0.390	0.434
6/3/19	10:06	156	19	17	none	50.90	-0.02	0.18	0.303	0.371	0.384	0.354
6/3/19	10:06	156	20	18	none	51.30	0.18	-0.01	0.027	0.346	0.027	0.030
6/3/19	10:06	156	21	19	none	51.60	0.03	0.12	0.028	0.320	0.029	0.030
6/3/19	10:06	156	22	20	none	51.90	0.58	0.07	0.029	0.336	0.307	0.310
6/3/19	10:06	156	23	21	none	50.60	0.54	0.53	0.367	0.587	0.366	0.452
6/3/19	10:06	156	24	22	none	50.90	0.03	-0.47	0.304	0.440	0.316	0.359
6/3/19	10:06	156	25	23	none	51.20	0.19	0.02	0.340	0.430	0.370	0.382
6/3/19	10:06	156	26	24	none	51.40	0.16	1.12	0.364	0.472	0.362	0.402
6/3/19	10:06	156	27	25	none	51.80	0.47	-0.03	0.483	0.594	0.570	0.551
6/3/19	10:06	156	28	13	none	51.30	0.60	-0.04	0.318	0.396	0.324	0.348
6/3/19	10:37	157	2	13	max	51.40	0.36	-0.09	0.336	0.431	0.343	0.373
6/3/19	10:37	157	3	1	max	50.30	0.60	0.50	0.538	0.897	0.479	0.664
6/3/19	10:37	157	4	2	max	50.70	0.64	-0.02	0.330	0.452	0.365	0.386
6/3/19	10:37	157	5	3	max	51.00	1.62	-0.13	0.400	0.458	0.469	0.444
6/3/19	10:37	157	6	4	max	51.30	1.52	0.46	0.322	0.383	0.394	0.368
6/3/19	10:37	157	7	5	max	51.70	1.02	-0.16	0.416	0.435	0.489	0.448
6/3/19	10:37	157	8	6	max	50.60	0.31	0.03	0.365	0.460	0.403	0.411
6/3/19	10:37	157	9	7	max	51.00	0.32	-0.03	0.029	0.354	0.303	0.316
6/3/19	10:37	157	10	8	max	51.30	1.02	0.15	0.029	0.429	0.315	0.351
6/3/19	10:37	157	11	9	max	51.50	1.21	-0.02	0.306	0.415	0.324	0.351

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	10:37	157	12	10	max	51.80	0.88	-0.31	0.303	0.369	0.333	0.336
6/3/19	10:37	157	13	11	max	50.60	0.35	0.30	0.353	0.474	0.378	0.405
6/3/19	10:37	157	14	12	max	51.10	0.32	-0.11	0.315	0.393	0.324	0.346
6/3/19	10:37	157	15	13	max	51.40	0.46	-0.07	0.330	0.429	0.343	0.370
6/3/19	10:37	157	16	14	max	51.60	0.57	-0.38	0.339	0.441	0.370	0.386
6/3/19	10:37	157	17	15	max	52.10	0.56	-0.09	0.347	0.484	0.335	0.394
6/3/19	10:37	157	18	16	max	50.60	0.47	0.54	0.352	0.497	0.367	0.410
6/3/19	10:37	157	19	17	max	51.00	-0.13	0.16	0.308	0.397	0.391	0.368
6/3/19	10:37	157	20	18	max	51.40	0.19	-0.06	0.028	0.347	0.028	0.304
6/3/19	10:37	157	21	19	max	51.60	0.19	0.05	0.028	0.326	0.303	0.304
6/3/19	10:37	157	22	20	max	51.90	0.46	0.03	0.030	0.363	0.334	0.332
6/3/19	10:37	157	23	21	max	50.60	0.48	0.53	0.350	0.569	0.369	0.441
6/3/19	10:37	157	24	22	max	50.90	0.03	-0.49	0.311	0.442	0.338	0.368
6/3/19	10:37	157	25	23	max	51.20	0.09	0.19	0.341	0.446	0.384	0.393
6/3/19	10:37	157	26	24	max	51.40	0.11	1.08	0.363	0.470	0.380	0.407
6/3/19	10:37	157	27	25	max	51.80	0.37	-0.03	0.473	0.589	0.577	0.549
6/3/19	10:37	157	28	13	max	51.40	0.52	-0.07	0.333	0.431	0.342	0.371
6/3/19	11:06	158	2	13	none	25.70	0.05	0.02	0.418	0.509	0.452	0.461
6/3/19	11:06	158	3	1	none	25.20	0.35	0.37	0.491	0.813	0.425	0.601
6/3/19	11:06	158	4	2	none	25.40	0.18	-0.03	0.329	0.345	0.474	0.388
6/3/19	11:06	158	5	3	none	25.50	0.66	0.01	0.335	0.481	0.375	0.402
6/3/19	11:06	158	6	4	none	25.70	0.60	0.49	0.338	0.390	0.444	0.393
6/3/19	11:06	158	7	5	none	25.90	0.02	0.09	0.401	0.500	0.417	0.442
6/3/19	11:06	158	8	6	none	25.30	0.02	0.02	0.348	0.380	0.428	0.387
6/3/19	11:06	158	9	7	none	25.50	-0.03	-0.07	0.354	0.443	0.422	0.408
6/3/19	11:06	158	10	8	none	25.60	0.36	0.16	0.322	0.445	0.352	0.377
6/3/19	11:06	158	11	9	none	25.80	0.03	-0.02	0.410	0.501	0.451	0.455
6/3/19	11:06	158	12	10	none	25.80	0.72	-0.19	0.361	0.433	0.499	0.435

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	11:06	158	13	11	none	25.30	0.04	0.09	0.445	0.589	0.488	0.511
6/3/19	11:06	158	14	12	none	25.50	0.02	-0.03	0.413	0.442	0.505	0.455
6/3/19	11:06	158	15	13	none	25.70	0.07	0.03	0.415	0.511	0.456	0.462
6/3/19	11:06	158	16	14	none	25.80	0.02	0.17	0.406	0.479	0.445	0.445
6/3/19	11:06	158	17	15	none	26.10	0.03	0.15	0.457	0.662	0.465	0.536
6/3/19	11:06	158	18	16	none	25.30	0.12	0.03	0.384	0.527	0.380	0.436
6/3/19	11:06	158	19	17	none	25.50	-0.02	0.15	0.369	0.428	0.445	0.415
6/3/19	11:06	158	20	18	none	25.70	0.11	0.07	0.352	0.457	0.374	0.397
6/3/19	11:06	158	21	19	none	25.80	0.12	0.12	0.349	0.413	0.393	0.386
6/3/19	11:06	158	22	20	none	25.90	-0.18	-0.09	0.327	0.443	0.372	0.383
6/3/19	11:06	158	23	21	none	25.30	0.19	0.03	0.402	0.558	0.472	0.482
6/3/19	11:06	158	24	22	none	25.50	0.14	-0.36	0.385	0.541	0.481	0.473
6/3/19	11:06	158	25	23	none	25.60	0.00	0.03	0.348	0.419	0.425	0.399
6/3/19	11:06	158	26	24	none	25.70	-0.07	0.68	0.383	0.409	0.511	0.438
6/3/19	11:06	158	27	25	none	26.00	0.07	-0.31	0.450	0.605	0.460	0.510
6/3/19	11:06	158	28	13	none	25.60	0.09	0.06	0.412	0.520	0.452	0.464
6/3/19	11:33	159	2	13	max	25.70	0.03	-0.01	0.449	0.534	0.479	0.489
6/3/19	11:33	159	3	1	max	25.20	0.03	0.03	0.502	0.766	0.457	0.591
6/3/19	11:33	159	4	2	max	25.40	0.17	-0.03	0.382	0.366	0.513	0.426
6/3/19	11:33	159	5	3	max	25.60	0.72	0.06	0.394	0.565	0.406	0.461
6/3/19	11:33	159	6	4	max	25.70	0.62	0.48	0.377	0.465	0.463	0.437
6/3/19	11:33	159	7	5	max	25.90	0.18	0.13	0.445	0.527	0.477	0.484
6/3/19	11:33	159	8	6	max	25.30	0.03	0.15	0.386	0.490	0.457	0.447
6/3/19	11:33	159	9	7	max	25.50	-0.02	-0.07	0.392	0.413	0.452	0.420
6/3/19	11:33	159	10	8	max	25.60	0.42	0.19	0.386	0.518	0.429	0.448
6/3/19	11:33	159	11	9	max	25.80	0.03	-0.09	0.459	0.541	0.552	0.519
6/3/19	11:33	159	12	10	max	25.90	0.68	-0.02	0.374	0.439	0.485	0.435
6/3/19	11:33	159	13	11	max	25.40	0.07	0.09	0.513	0.683	0.498	0.571

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	11:33	159	14	12	max	25.50	0.03	-0.33	0.471	0.466	0.556	0.499
6/3/19	11:33	159	15	13	max	25.70	0.04	0.00	0.455	0.534	0.474	0.489
6/3/19	11:33	159	16	14	max	25.80	0.02	0.11	0.423	0.484	0.465	0.458
6/3/19	11:33	159	17	15	max	26.10	0.02	0.13	0.467	0.656	0.472	0.539
6/3/19	11:33	159	18	16	max	25.40	0.11	0.03	0.404	0.527	0.392	0.445
6/3/19	11:33	159	19	17	max	25.50	-0.03	0.13	0.398	0.529	0.422	0.453
6/3/19	11:33	159	20	18	max	25.70	0.09	-0.01	0.387	0.435	0.423	0.415
6/3/19	11:33	159	21	19	max	25.80	0.12	0.08	0.368	0.469	0.391	0.412
6/3/19	11:33	159	22	20	max	25.90	-0.15	-0.05	0.364	0.472	0.400	0.415
6/3/19	11:33	159	23	21	max	25.30	0.19	0.31	0.422	0.510	0.485	0.474
6/3/19	11:33	159	24	22	max	25.50	0.11	-0.34	0.410	0.535	0.504	0.486
6/3/19	11:33	159	25	23	max	25.60	0.01	0.03	0.382	0.443	0.458	0.429
6/3/19	11:33	159	26	24	max	25.70	-0.07	0.67	0.410	0.422	0.509	0.449
6/3/19	11:33	159	27	25	max	26.00	0.08	-0.03	0.467	0.645	0.495	0.541
6/3/19	11:33	159	28	13	max	25.60	0.07	0.02	0.458	0.550	0.481	0.498
6/3/19	13:15	160	2	13	max	25.70	0.01	-0.03	0.449	0.526	0.477	0.485
6/3/19	13:15	160	3	1	max	25.30	0.33	0.31	0.494	0.790	0.471	0.603
6/3/19	13:15	160	4	2	max	25.50	0.16	-0.02	0.371	0.370	0.520	0.426
6/3/19	13:15	160	5	3	max	25.60	0.70	0.06	0.398	0.572	0.415	0.468
6/3/19	13:15	160	6	4	max	25.70	0.61	0.48	0.387	0.479	0.471	0.448
6/3/19	13:15	160	7	5	max	25.90	0.16	0.14	0.469	0.552	0.486	0.504
6/3/19	13:15	160	8	6	max	25.30	0.03	0.12	0.388	0.505	0.447	0.449
6/3/19	13:15	160	9	7	max	25.50	-0.03	-0.08	0.383	0.415	0.459	0.420
6/3/19	13:15	160	10	8	max	25.60	0.36	0.14	0.387	0.543	0.450	0.465
6/3/19	13:15	160	11	9	max	25.80	0.03	-0.05	0.451	0.557	0.521	0.512
6/3/19	13:15	160	12	10	max	25.90	0.66	-0.02	0.393	0.480	0.499	0.459
6/3/19	13:15	160	13	11	max	25.40	0.06	0.08	0.497	0.665	0.501	0.560
6/3/19	13:15	160	14	12	max	25.50	0.01	-0.30	0.459	0.474	0.547	0.495

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	13:15	160	15	13	max	25.70	0.04	-0.02	0.447	0.530	0.473	0.485
6/3/19	13:15	160	16	14	max	25.80	0.19	0.09	0.435	0.510	0.479	0.476
6/3/19	13:15	160	17	15	max	26.00	0.18	0.13	0.490	0.695	0.488	0.566
6/3/19	13:15	160	18	16	max	25.40	0.11	0.02	0.412	0.565	0.414	0.469
6/3/19	13:15	160	19	17	max	25.50	-0.02	0.10	0.403	0.509	0.470	0.463
6/3/19	13:15	160	20	18	max	25.70	0.09	0.00	0.386	0.472	0.436	0.433
6/3/19	13:15	160	21	19	max	25.70	0.12	0.11	0.386	0.495	0.435	0.441
6/3/19	13:15	160	22	20	max	25.90	-0.12	0.03	0.376	0.582	0.489	0.490
6/3/19	13:15	160	23	21	max	25.40	0.18	0.30	0.427	0.569	0.474	0.494
6/3/19	13:15	160	24	22	max	25.50	0.07	-0.32	0.417	0.517	0.497	0.479
6/3/19	13:15	160	25	23	max	25.60	0.00	0.03	0.387	0.468	0.465	0.442
6/3/19	13:15	160	26	24	max	25.70	-0.07	0.67	0.456	0.498	0.601	0.522
6/3/19	13:15	160	27	25	max	25.90	0.10	-0.03	0.518	0.784	0.565	0.633
6/3/19	13:15	160	28	13	max	25.70	0.08	0.00	0.447	0.537	0.476	0.488
6/3/19	13:51	162	2	13	max	25.70	0.07	-0.05	0.508	0.544	0.525	0.526
6/3/19	13:51	162	3	1	max	25.40	0.35	0.33	0.522	0.863	0.498	0.649
6/3/19	13:51	162	4	2	max	25.60	0.16	-0.02	0.409	0.389	0.550	0.455
6/3/19	13:51	162	5	3	max	25.70	0.72	0.06	0.396	0.569	0.429	0.471
6/3/19	13:51	162	6	4	max	25.80	0.63	0.47	0.416	0.504	0.469	0.464
6/3/19	13:51	162	7	5	max	26.10	0.16	0.14	0.489	0.576	0.489	0.520
6/3/19	13:51	162	8	6	max	25.40	0.02	0.12	0.406	0.554	0.499	0.490
6/3/19	13:51	162	9	7	max	25.60	-0.02	-0.05	0.401	0.487	0.439	0.444
6/3/19	13:51	162	10	8	max	25.70	0.37	0.12	0.429	0.598	0.496	0.513
6/3/19	13:51	162	11	9	max	25.90	0.02	0.00	0.480	0.584	0.515	0.528
6/3/19	13:51	162	12	10	max	25.90	0.52	-0.14	0.462	0.724	0.549	0.589
6/3/19	13:51	162	13	11	max	25.40	0.11	0.07	0.510	0.662	0.512	0.566
6/3/19	13:51	162	14	12	max	25.60	0.05	-0.02	0.480	0.529	0.525	0.512
6/3/19	13:51	162	15	13	max	25.70	0.07	-0.06	0.484	0.545	0.531	0.521

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	13:51	162	16	14	max	25.80	0.19	0.09	0.511	0.531	0.504	0.516
6/3/19	13:51	162	17	15	max	26.10	0.15	0.14	0.508	0.711	0.509	0.584
6/3/19	13:51	162	18	16	max	25.40	0.19	0.02	0.445	0.622	0.447	0.511
6/3/19	13:51	162	19	17	max	25.50	-0.19	0.06	0.460	0.561	0.539	0.522
6/3/19	13:51	162	20	18	max	25.70	0.03	0.02	0.441	0.576	0.448	0.492
6/3/19	13:51	162	21	19	max	25.80	0.13	0.12	0.452	0.552	0.497	0.502
6/3/19	13:51	162	22	20	max	25.90	-0.14	0.05	0.455	0.676	0.536	0.563
6/3/19	13:51	162	23	21	max	25.40	0.19	0.30	0.490	0.662	0.497	0.555
6/3/19	13:51	162	24	22	max	25.60	0.08	-0.34	0.449	0.511	0.523	0.496
6/3/19	13:51	162	25	23	max	25.70	0.00	0.03	0.429	0.507	0.498	0.479
6/3/19	13:51	162	26	24	max	25.80	-0.11	0.63	0.549	0.610	0.701	0.623
6/3/19	13:51	162	27	25	max	26.10	0.02	-0.03	0.586	0.814	0.661	0.694
6/3/19	13:51	162	28	13	max	25.70	0.10	-0.04	0.503	0.549	0.526	0.526
6/3/19	14:22	163	2	13	max	25.70	0.10	-0.01	0.516	0.575	0.584	0.559
6/3/19	14:22	163	3	1	max	25.40	0.36	0.34	0.609	0.991	0.543	0.741
6/3/19	14:22	163	4	2	max	25.50	0.17	-0.16	0.478	0.473	0.638	0.535
6/3/19	14:22	163	5	3	max	25.60	0.73	0.15	0.638	0.801	0.647	0.699
6/3/19	14:22	163	6	4	max	25.70	0.60	0.48	0.637	0.786	0.626	0.687
6/3/19	14:22	163	7	5	max	25.90	0.18	0.12	0.640	0.729	0.690	0.687
6/3/19	14:22	163	8	6	max	25.40	0.02	0.11	0.463	0.685	0.590	0.586
6/3/19	14:22	163	9	7	max	25.50	0.06	-0.06	0.488	0.627	0.553	0.559
6/3/19	14:22	163	10	8	max	25.60	0.38	0.07	0.588	0.678	0.621	0.630
6/3/19	14:22	163	11	9	max	25.70	0.02	-0.03	0.629	0.752	0.605	0.665
6/3/19	14:22	163	12	10	max	25.90	0.45	-0.09	0.453	0.682	0.543	0.567
6/3/19	14:22	163	13	11	max	25.40	0.13	0.11	0.498	0.660	0.555	0.575
6/3/19	14:22	163	14	12	max	25.50	0.05	-0.18	0.471	0.533	0.564	0.524
6/3/19	14:22	163	15	13	max	25.70	0.07	0.01	0.537	0.572	0.589	0.566
6/3/19	14:22	163	16	14	max	25.80	0.02	0.10	0.493	0.535	0.534	0.521

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	14:22	163	17	15	max	26.10	0.01	0.11	0.510	0.709	0.518	0.586
6/3/19	14:22	163	18	16	max	25.40	0.02	0.02	0.524	0.724	0.521	0.597
6/3/19	14:22	163	19	17	max	25.50	-0.14	0.03	0.579	0.657	0.653	0.631
6/3/19	14:22	163	20	18	max	25.80	-0.05	0.00	0.440	0.615	0.488	0.520
6/3/19	14:22	163	21	19	max	25.90	0.14	0.14	0.453	0.554	0.489	0.500
6/3/19	14:22	163	22	20	max	26.10	-0.03	0.00	0.451	0.655	0.586	0.570
6/3/19	14:22	163	23	21	max	25.50	0.02	0.03	0.483	0.691	0.521	0.572
6/3/19	14:22	163	24	22	max	25.60	0.06	-0.37	0.471	0.514	0.555	0.514
6/3/19	14:22	163	25	23	max	25.70	-0.02	0.02	0.444	0.544	0.509	0.501
6/3/19	14:22	163	26	24	max	25.90	-0.13	0.65	0.530	0.676	0.691	0.637
6/3/19	14:22	163	27	25	max	26.20	0.00	-0.03	0.554	0.785	0.627	0.663
6/3/19	14:22	163	28	13	max	25.70	0.10	0.05	0.499	0.577	0.561	0.547
6/3/19	14:56	164	2	13	max	25.70	0.02	-0.09	0.465	0.508	0.493	0.489
6/3/19	14:56	164	3	1	max	25.30	0.31	0.37	0.538	0.848	0.498	0.647
6/3/19	14:56	164	4	2	max	25.50	0.18	-0.19	0.398	0.388	0.562	0.456
6/3/19	14:56	164	5	3	max	25.60	0.74	0.09	0.491	0.634	0.542	0.559
6/3/19	14:56	164	6	4	max	25.60	0.68	0.40	0.495	0.630	0.543	0.559
6/3/19	14:56	164	7	5	max	25.80	0.13	0.02	0.659	0.878	0.697	0.751
6/3/19	14:56	164	8	6	max	25.40	0.03	0.17	0.383	0.493	0.423	0.435
6/3/19	14:56	164	9	7	max	25.60	0.01	-0.05	0.382	0.433	0.437	0.418
6/3/19	14:56	164	10	8	max	25.60	0.36	0.05	0.442	0.562	0.532	0.514
6/3/19	14:56	164	11	9	max	25.70	0.37	0.01	0.529	0.769	0.575	0.633
6/3/19	14:56	164	12	10	max	25.70	0.43	-0.16	0.511	0.848	0.654	0.685
6/3/19	14:56	164	13	11	max	25.50	0.08	0.07	0.502	0.634	0.508	0.552
6/3/19	14:56	164	14	12	max	25.60	0.02	-0.34	0.475	0.453	0.556	0.497
6/3/19	14:56	164	15	13	max	25.70	0.04	-0.09	0.464	0.516	0.499	0.493
6/3/19	14:56	164	16	14	max	25.70	0.19	-0.03	0.467	0.544	0.491	0.502
6/3/19	14:56	164	17	15	max	25.90	0.16	0.12	0.497	0.673	0.550	0.578

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	14:56	164	18	16	max	25.50	0.13	0.02	0.421	0.537	0.410	0.459
6/3/19	14:56	164	19	17	max	25.50	-0.18	0.07	0.400	0.471	0.460	0.445
6/3/19	14:56	164	20	18	max	25.70	-0.01	0.04	0.419	0.564	0.438	0.478
6/3/19	14:56	164	21	19	max	25.70	0.07	0.13	0.450	0.552	0.532	0.513
6/3/19	14:56	164	22	20	max	25.80	0.03	0.09	0.520	0.862	0.603	0.677
6/3/19	14:56	164	23	21	max	25.40	0.16	0.30	0.437	0.602	0.466	0.507
6/3/19	14:56	164	24	22	max	25.60	0.04	-0.31	0.401	0.456	0.493	0.451
6/3/19	14:56	164	25	23	max	25.60	-0.05	0.34	0.470	0.597	0.524	0.533
6/3/19	14:56	164	26	24	max	25.70	-0.02	0.72	0.639	0.933	0.740	0.780
6/3/19	14:56	164	27	25	max	25.90	0.16	-0.10	0.712	0.910	0.846	0.827
6/3/19	14:56	164	28	13	max	25.70	0.08	-0.06	0.460	0.521	0.503	0.495
6/3/19	15:29	165	2	13	max	51.40	0.30	-0.15	0.334	0.421	0.346	0.369
6/3/19	15:29	165	3	1	max	50.30	0.60	0.59	0.600	0.984	0.516	0.729
6/3/19	15:29	165	4	2	max	50.70	0.56	-0.02	0.386	0.523	0.409	0.443
6/3/19	15:29	165	5	3	max	51.00	1.45	-0.11	0.456	0.637	0.447	0.521
6/3/19	15:29	165	6	4	max	51.20	1.42	0.53	0.421	0.536	0.490	0.485
6/3/19	15:29	165	7	5	max	51.60	0.90	-0.02	0.553	0.728	0.626	0.640
6/3/19	15:29	165	8	6	max	50.50	0.02	0.03	0.381	0.483	0.411	0.427
6/3/19	15:29	165	9	7	max	51.00	0.03	-0.30	0.305	0.392	0.320	0.341
6/3/19	15:29	165	10	8	max	51.30	0.81	0.14	0.344	0.475	0.391	0.407
6/3/19	15:29	165	11	9	max	51.40	1.33	-0.03	0.468	0.786	0.539	0.613
6/3/19	15:29	165	12	10	max	51.70	0.64	-0.03	0.442	0.617	0.581	0.552
6/3/19	15:29	165	13	11	max	50.60	0.30	0.03	0.350	0.459	0.378	0.398
6/3/19	15:29	165	14	12	max	51.10	0.03	-0.14	0.315	0.376	0.321	0.339
6/3/19	15:29	165	15	13	max	51.40	0.39	-0.15	0.337	0.416	0.351	0.370
6/3/19	15:29	165	16	14	max	51.50	0.47	-0.45	0.378	0.539	0.424	0.452
6/3/19	15:29	165	17	15	max	51.90	0.51	-0.12	0.398	0.549	0.452	0.471
6/3/19	15:29	165	18	16	max	50.70	0.48	0.47	0.377	0.522	0.384	0.433

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	15:29	165	19	17	max	51.10	-0.03	0.14	0.316	0.375	0.388	0.361
6/3/19	15:29	165	20	18	max	51.40	-0.05	-0.07	0.029	0.409	0.030	0.336
6/3/19	15:29	165	21	19	max	51.50	0.12	0.03	0.372	0.524	0.404	0.438
6/3/19	15:29	165	22	20	max	51.90	0.52	-0.07	0.420	0.625	0.501	0.522
6/3/19	15:29	165	23	21	max	50.70	0.34	0.54	0.409	0.654	0.421	0.507
6/3/19	15:29	165	24	22	max	51.00	0.16	-0.42	0.337	0.451	0.368	0.388
6/3/19	15:29	165	25	23	max	51.30	0.09	0.17	0.367	0.465	0.416	0.418
6/3/19	15:29	165	26	24	max	51.50	0.02	1.04	0.402	0.448	0.444	0.432
6/3/19	15:29	165	27	25	max	51.90	0.03	-0.12	0.490	0.619	0.584	0.567
6/3/19	15:29	165	28	13	max	51.40	0.48	-0.15	0.335	0.415	0.358	0.371
6/3/19	16:00	166	2	13	max	25.70	0.10	-0.08	0.506	0.541	0.546	0.531
6/3/19	16:00	166	3	1	max	25.30	0.36	0.36	0.585	0.929	0.525	0.703
6/3/19	16:00	166	4	2	max	25.50	0.19	-0.15	0.432	0.438	0.591	0.493
6/3/19	16:00	166	5	3	max	25.60	0.70	0.05	0.537	0.648	0.562	0.584
6/3/19	16:00	166	6	4	max	25.70	0.63	0.42	0.494	0.599	0.511	0.537
6/3/19	16:00	166	7	5	max	25.90	0.02	0.13	0.624	0.774	0.620	0.676
6/3/19	16:00	166	8	6	max	25.40	0.03	0.14	0.398	0.523	0.440	0.457
6/3/19	16:00	166	9	7	max	25.60	0.06	-0.06	0.415	0.510	0.471	0.467
6/3/19	16:00	166	10	8	max	25.60	0.36	0.07	0.482	0.631	0.533	0.552
6/3/19	16:00	166	11	9	max	25.70	0.31	-0.03	0.538	0.705	0.525	0.595
6/3/19	16:00	166	12	10	max	25.80	0.54	-0.17	0.527	0.830	0.626	0.673
6/3/19	16:00	166	13	11	max	25.50	0.10	0.06	0.492	0.637	0.517	0.552
6/3/19	16:00	166	14	12	max	25.60	0.06	-0.35	0.462	0.471	0.559	0.499
6/3/19	16:00	166	15	13	max	25.70	0.09	-0.08	0.491	0.542	0.536	0.524
6/3/19	16:00	166	16	14	max	25.70	0.02	-0.02	0.553	0.574	0.607	0.578
6/3/19	16:00	166	17	15	max	25.90	0.12	0.12	0.524	0.703	0.521	0.589
6/3/19	16:00	166	18	16	max	25.50	0.15	0.02	0.434	0.592	0.428	0.490
6/3/19	16:00	166	19	17	max	25.50	-0.14	0.05	0.422	0.510	0.472	0.469

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	16:00	166	20	18	max	25.80	0.07	0.04	0.404	0.587	0.413	0.476
6/3/19	16:00	166	21	19	max	25.80	0.13	0.12	0.450	0.516	0.482	0.483
6/3/19	16:00	166	22	20	max	25.90	-0.15	0.00	0.447	0.658	0.532	0.552
6/3/19	16:00	166	23	21	max	25.50	0.02	0.03	0.428	0.598	0.484	0.509
6/3/19	16:00	166	24	22	max	25.60	0.09	-0.38	0.398	0.485	0.477	0.455
6/3/19	16:00	166	25	23	max	25.70	0.03	0.03	0.410	0.505	0.467	0.463
6/3/19	16:00	166	26	24	max	25.80	-0.01	0.69	0.502	0.543	0.597	0.549
6/3/19	16:00	166	27	25	max	26.10	0.08	-0.02	0.550	0.793	0.605	0.658
6/3/19	16:00	166	28	13	max	25.70	0.11	-0.07	0.489	0.544	0.533	0.522
6/3/19	16:26	167	2	13	max	51.30	0.35	-0.16	0.358	0.444	0.375	0.394
6/3/19	16:26	167	3	1	max	50.30	0.64	0.57	0.603	0.959	0.492	0.713
6/3/19	16:26	167	4	2	max	50.70	0.61	-0.03	0.364	0.491	0.395	0.420
6/3/19	16:26	167	5	3	max	51.00	1.52	-0.13	0.404	0.522	0.435	0.457
6/3/19	16:26	167	6	4	max	51.20	1.47	0.46	0.351	0.445	0.417	0.407
6/3/19	16:26	167	7	5	max	51.60	0.90	-0.11	0.475	0.585	0.561	0.542
6/3/19	16:26	167	8	6	max	50.40	0.02	0.03	0.384	0.470	0.414	0.424
6/3/19	16:26	167	9	7	max	50.80	0.03	-0.03	0.030	0.385	0.313	0.334
6/3/19	16:26	167	10	8	max	51.10	0.75	0.18	0.341	0.484	0.373	0.404
6/3/19	16:26	167	11	9	max	51.30	1.17	-0.03	0.386	0.590	0.416	0.473
6/3/19	16:26	167	12	10	max	51.70	0.77	-0.30	0.358	0.489	0.463	0.440
6/3/19	16:26	167	13	11	max	50.40	0.30	0.03	0.354	0.458	0.375	0.398
6/3/19	16:26	167	14	12	max	51.00	0.02	-0.15	0.319	0.383	0.330	0.345
6/3/19	16:26	167	15	13	max	51.20	0.35	-0.16	0.373	0.450	0.396	0.408
6/3/19	16:26	167	16	14	max	51.30	0.51	-0.37	0.402	0.518	0.448	0.458
6/3/19	16:26	167	17	15	max	51.80	0.41	-0.04	0.378	0.530	0.405	0.442
6/3/19	16:26	167	18	16	max	50.60	0.44	0.50	0.365	0.498	0.373	0.417
6/3/19	16:26	167	19	17	max	50.90	-0.08	0.16	0.316	0.372	0.403	0.366
6/3/19	16:26	167	20	18	max	51.30	0.00	-0.04	0.028	0.381	0.028	0.317

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/3/19	16:26	167	21	19	max	51.40	0.06	0.00	0.316	0.424	0.336	0.362
6/3/19	16:26	167	22	20	max	51.80	0.36	-0.06	0.321	0.462	0.389	0.395
6/3/19	16:26	167	23	21	max	50.50	0.35	0.54	0.392	0.614	0.399	0.480
6/3/19	16:26	167	24	22	max	50.90	0.18	-0.46	0.321	0.441	0.345	0.372
6/3/19	16:26	167	25	23	max	51.20	0.05	0.19	0.340	0.424	0.389	0.386
6/3/19	16:26	167	26	24	max	51.40	0.15	1.06	0.369	0.418	0.405	0.398
6/3/19	16:26	167	27	25	max	51.70	0.30	-0.34	0.467	0.602	0.568	0.549
6/3/19	16:26	167	28	13	max	51.20	0.42	-0.13	0.355	0.442	0.389	0.397
6/4/19	8:48	168	2	13	max	25.70	0.05	0.00	0.476	0.549	0.509	0.512
6/4/19	8:48	168	3	1	max	25.30	0.32	0.37	0.616	0.958	0.527	0.725
6/4/19	8:48	168	4	2	max	25.40	0.02	-0.19	0.461	0.450	0.579	0.500
6/4/19	8:48	168	5	3	max	25.60	0.69	0.05	0.511	0.614	0.519	0.550
6/4/19	8:48	168	6	4	max	25.70	0.67	0.44	0.433	0.538	0.490	0.489
6/4/19	8:48	168	7	5	max	25.90	0.32	0.11	0.505	0.641	0.552	0.569
6/4/19	8:48	168	8	6	max	25.30	0.02	0.02	0.413	0.538	0.464	0.474
6/4/19	8:48	168	9	7	max	25.50	0.06	-0.07	0.431	0.504	0.467	0.468
6/4/19	8:48	168	10	8	max	25.60	0.43	0.15	0.450	0.630	0.517	0.537
6/4/19	8:48	168	11	9	max	25.70	0.30	0.01	0.511	0.621	0.541	0.560
6/4/19	8:48	168	12	10	max	25.80	0.60	-0.14	0.477	0.799	0.600	0.639
6/4/19	8:48	168	13	11	max	25.40	0.11	0.11	0.510	0.650	0.513	0.562
6/4/19	8:48	168	14	12	max	25.50	0.07	-0.03	0.459	0.470	0.545	0.493
6/4/19	8:48	168	15	13	max	25.70	0.09	0.04	0.468	0.548	0.513	0.511
6/4/19	8:48	168	16	14	max	25.80	0.03	0.09	0.461	0.519	0.500	0.494
6/4/19	8:48	168	17	15	max	26.00	0.14	0.16	0.504	0.705	0.492	0.575
6/4/19	8:48	168	18	16	max	25.40	0.16	0.03	0.440	0.613	0.431	0.502
6/4/19	8:48	168	19	17	max	25.50	-0.17	0.12	0.417	0.537	0.479	0.480
6/4/19	8:48	168	20	18	max	25.70	0.13	0.06	0.424	0.525	0.426	0.461
6/4/19	8:48	168	21	19	max	25.80	0.16	0.16	0.400	0.482	0.446	0.444

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/4/19	8:48	168	22	20	max	25.90	-0.14	0.02	0.399	0.602	0.479	0.500
6/4/19	8:48	168	23	21	max	25.40	0.02	0.31	0.429	0.565	0.482	0.495
6/4/19	8:48	168	24	22	max	25.60	0.12	-0.33	0.440	0.521	0.501	0.488
6/4/19	8:48	168	25	23	max	25.70	0.02	0.30	0.389	0.480	0.452	0.442
6/4/19	8:48	168	26	24	max	25.80	-0.02	0.73	0.462	0.517	0.566	0.517
6/4/19	8:48	168	27	25	max	26.10	0.00	-0.02	0.508	0.746	0.533	0.605
6/4/19	8:48	168	28	13	max	25.70	0.12	0.05	0.509	0.564	0.523	0.532
6/4/19	9:29	169	2	13	max	51.30	0.37	-0.11	0.345	0.442	0.364	0.386
6/4/19	9:29	169	3	1	max	50.02	0.65	0.56	0.594	0.983	0.514	0.726
6/4/19	9:29	169	4	2	max	50.60	0.68	-0.02	0.363	0.504	0.395	0.425
6/4/19	9:29	169	5	3	max	50.90	1.60	-0.12	0.416	0.520	0.483	0.475
6/4/19	9:29	169	6	4	max	51.20	1.56	0.48	0.353	0.458	0.437	0.418
6/4/19	9:29	169	7	5	max	51.60	1.02	-0.02	0.449	0.510	0.535	0.500
6/4/19	9:29	169	8	6	max	50.50	0.31	0.02	0.373	0.493	0.407	0.427
6/4/19	9:29	169	9	7	max	50.90	0.34	-0.03	0.030	0.388	0.323	0.339
6/4/19	9:29	169	10	8	max	51.10	0.98	0.14	0.341	0.550	0.380	0.433
6/4/19	9:29	169	11	9	max	51.30	1.27	-0.03	0.349	0.586	0.391	0.454
6/4/19	9:29	169	12	10	max	51.70	0.93	-0.32	0.331	0.497	0.400	0.415
6/4/19	9:29	169	13	11	max	50.50	0.39	0.03	0.346	0.473	0.372	0.401
6/4/19	9:29	169	14	12	max	51.00	0.31	-0.15	0.318	0.404	0.327	0.352
6/4/19	9:29	169	15	13	max	51.30	0.46	-0.10	0.343	0.441	0.369	0.387
6/4/19	9:29	169	16	14	max	51.40	0.55	-0.37	0.356	0.479	0.403	0.416
6/4/19	9:29	169	17	15	max	51.90	0.51	-0.06	0.359	0.510	0.356	0.415
6/4/19	9:29	169	18	16	max	50.60	0.48	0.53	0.378	0.541	0.388	0.442
6/4/19	9:29	169	19	17	max	50.90	-0.02	0.14	0.318	0.394	0.406	0.375
6/4/19	9:29	169	20	18	max	51.30	0.13	-0.06	0.028	0.391	0.028	0.322
6/4/19	9:29	169	21	19	max	51.40	0.17	0.02	0.030	0.384	0.319	0.336
6/4/19	9:29	169	22	20	max	51.80	0.42	-0.03	0.311	0.398	0.375	0.363

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/4/19	9:29	169	23	21	max	50.50	0.46	0.52	0.374	0.616	0.397	0.475
6/4/19	9:29	169	24	22	max	50.90	0.03	-0.52	0.324	0.455	0.349	0.380
6/4/19	9:29	169	25	23	max	51.20	0.13	0.16	0.347	0.451	0.383	0.396
6/4/19	9:29	169	26	24	max	51.40	0.02	1.07	0.365	0.445	0.394	0.403
6/4/19	9:29	169	27	25	max	51.70	0.39	-0.41	0.475	0.617	0.547	0.549
6/4/19	9:29	169	28	13	max	51.20	0.52	-0.09	0.346	0.455	0.374	0.394
6/4/19	12:37	170	2	13	none	10.00	-0.03	0.08	0.536	0.571	0.545	0.551
6/4/19	12:37	170	3	13	none	20.00	0.05	0.05	0.462	0.597	0.484	0.518
6/4/19	12:37	170	4	13	none	30.00	0.06	0.09	0.387	0.479	0.425	0.432
6/4/19	12:37	170	5	13	none	40.00	0.16	0.01	0.352	0.432	0.382	0.390
6/4/19	12:37	170	6	13	none	50.00	0.03	-0.09	0.320	0.412	0.328	0.356
6/4/19	12:37	170	7	13	12.5%	10.00	-0.02	0.06	0.523	0.568	0.558	0.550
6/4/19	12:37	170	8	13	12.5%	20.00	0.02	0.07	0.449	0.590	0.485	0.512
6/4/19	12:37	170	9	13	12.5%	30.00	0.07	0.06	0.388	0.475	0.434	0.434
6/4/19	12:37	170	10	13	12.5%	40.00	0.16	-0.04	0.346	0.414	0.376	0.380
6/4/19	12:37	170	11	13	12.5%	50.00	0.03	-0.09	0.323	0.412	0.332	0.358
6/4/19	12:37	170	12	13	25%	10.00	-0.02	0.04	0.541	0.572	0.578	0.564
6/4/19	12:37	170	13	13	25%	20.00	0.03	0.03	0.456	0.614	0.490	0.524
6/4/19	12:37	170	14	13	25%	30.00	0.06	0.07	0.390	0.483	0.435	0.438
6/4/19	12:37	170	15	13	25%	40.00	0.15	-0.02	0.347	0.422	0.380	0.384
6/4/19	12:37	170	16	13	25%	50.00	0.03	-0.09	0.321	0.407	0.325	0.353
6/4/19	12:37	170	17	13	37.5%	10.00	-0.01	0.04	0.543	0.557	0.586	0.562
6/4/19	12:37	170	18	13	37.5%	20.00	0.03	0.03	0.460	0.609	0.501	0.527
6/4/19	12:37	170	19	13	37.5%	30.00	0.06	0.06	0.399	0.484	0.436	0.441
6/4/19	12:37	170	20	13	37.5%	40.00	0.17	-0.03	0.354	0.428	0.384	0.390
6/4/19	12:37	170	21	13	37.5%	50.00	0.03	-0.09	0.324	0.416	0.335	0.361
6/4/19	12:37	170	22	13	50%	10.00	-0.01	0.03	0.554	0.554	0.600	0.570
6/4/19	12:37	170	23	13	50%	20.00	0.03	0.02	0.472	0.615	0.501	0.533

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/4/19	12:37	170	24	13	50%	30.00	0.07	0.05	0.404	0.490	0.441	0.446
6/4/19	12:37	170	25	13	50%	40.00	0.17	-0.02	0.352	0.436	0.389	0.394
6/4/19	12:37	170	26	13	50%	50.00	0.03	-0.09	0.323	0.416	0.332	0.359
6/4/19	12:37	170	27	13	62.5%	10.00	-0.01	0.01	0.611	0.550	0.626	0.597
6/4/19	12:37	170	28	13	62.5%	20.00	0.03	0.02	0.470	0.619	0.502	0.534
6/4/19	12:37	170	29	13	62.5%	30.00	0.07	0.05	0.397	0.490	0.439	0.444
6/4/19	12:37	170	30	13	62.5%	40.00	0.17	-0.02	0.357	0.438	0.388	0.396
6/4/19	12:37	170	31	13	62.5%	50.00	0.30	-0.11	0.325	0.428	0.333	0.365
6/4/19	12:37	170	32	13	75%	10.00	-0.01	0.01	0.622	0.551	0.635	0.604
6/4/19	12:37	170	33	13	75%	20.00	0.02	0.01	0.490	0.627	0.512	0.547
6/4/19	12:37	170	34	13	75%	30.00	0.07	0.03	0.407	0.490	0.443	0.448
6/4/19	12:37	170	35	13	75%	40.00	0.17	-0.03	0.358	0.445	0.392	0.400
6/4/19	12:37	170	36	13	75%	50.00	0.03	-0.10	0.328	0.427	0.334	0.366
6/4/19	12:37	170	37	13	87.5%	10.00	-0.01	0.01	0.770	0.556	0.641	0.661
6/4/19	12:37	170	38	13	87.5%	20.00	0.01	0.00	0.486	0.620	0.516	0.544
6/4/19	12:37	170	39	13	87.5%	30.00	0.07	0.03	0.410	0.495	0.440	0.450
6/4/19	12:37	170	40	13	87.5%	40.00	0.16	-0.03	0.360	0.444	0.394	0.401
6/4/19	12:37	170	41	13	87.5%	50.00	0.03	-0.10	0.328	0.430	0.340	0.369
6/4/19	12:37	170	42	13	max	10.10	-0.01	0.00	0.849	0.557	0.697	0.712
6/4/19	12:37	170	43	13	max	20.00	0.01	-0.01	0.508	0.626	0.524	0.555
6/4/19	12:37	170	44	13	max	30.00	0.06	0.03	0.413	0.496	0.443	0.452
6/4/19	12:37	170	45	13	max	40.00	0.16	-0.04	0.366	0.447	0.397	0.405
6/4/19	12:37	170	46	13	max	50.00	0.03	-0.11	0.329	0.431	0.342	0.370
6/4/19	14:50	171	2	13	none	10.00	-0.01	0.07	0.517	0.554	0.567	0.547
6/4/19	14:50	171	3	13	none	20.00	0.05	0.05	0.456	0.602	0.482	0.517
6/4/19	14:50	171	4	13	none	30.00	0.05	0.09	0.394	0.489	0.426	0.438
6/4/19	14:50	171	5	13	none	40.00	0.17	0.01	0.347	0.429	0.381	0.387

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/4/19	14:50	171	6	13	none	50.00	0.32	-0.09	0.313	0.400	0.321	0.347
6/4/19	14:50	171	7	13	12.5%	9.99	-0.01	0.06	0.530	0.564	0.560	0.551
6/4/19	14:50	171	8	13	12.5%	20.00	0.05	0.05	0.462	0.609	0.497	0.526
6/4/19	14:50	171	9	13	12.5%	30.00	0.07	0.07	0.388	0.488	0.434	0.439
6/4/19	14:50	171	10	13	12.5%	40.00	0.14	0.01	0.353	0.449	0.391	0.400
6/4/19	14:50	171	11	13	12.5%	50.00	0.30	-0.10	0.318	0.398	0.319	0.347
6/4/19	14:50	171	12	13	25%	9.99	-0.02	0.06	0.521	0.569	0.563	0.551
6/4/19	14:50	171	13	13	25%	20.00	0.04	0.06	0.452	0.584	0.488	0.511
6/4/19	14:50	171	14	13	25%	30.00	0.06	0.07	0.389	0.479	0.425	0.432
6/4/19	14:50	171	15	13	25%	40.00	0.15	-0.02	0.355	0.433	0.385	0.392
6/4/19	14:50	171	16	13	25%	50.00	0.03	-0.10	0.323	0.415	0.326	0.357
6/4/19	14:50	171	17	13	37.5%	9.97	-0.04	0.05	0.518	0.571	0.539	0.543
6/4/19	14:50	171	18	13	37.5%	20.00	0.03	0.04	0.454	0.598	0.489	0.518
6/4/19	14:50	171	19	13	37.5%	30.00	0.05	0.05	0.393	0.488	0.436	0.441
6/4/19	14:50	171	20	13	37.5%	40.00	0.18	-0.04	0.342	0.412	0.372	0.376
6/4/19	14:50	171	21	13	37.5%	50.00	0.03	-0.11	0.324	0.420	0.327	0.360
6/4/19	14:50	171	22	13	50%	9.98	-0.04	0.05	0.527	0.567	0.525	0.540
6/4/19	14:50	171	23	13	50%	20.00	0.01	0.04	0.447	0.575	0.496	0.509
6/4/19	14:50	171	24	13	50%	30.00	0.05	0.05	0.394	0.486	0.433	0.439
6/4/19	14:50	171	25	13	50%	40.00	0.14	-0.03	0.357	0.436	0.385	0.394
6/4/19	14:50	171	26	13	50%	50.00	0.03	-0.11	0.320	0.418	0.329	0.358
6/4/19	14:50	171	27	13	62.5%	10.00	-0.04	0.05	0.506	0.558	0.523	0.529
6/4/19	14:50	171	28	13	62.5%	20.00	0.00	0.04	0.448	0.571	0.503	0.510
6/4/19	14:50	171	29	13	62.5%	30.00	0.05	0.07	0.391	0.492	0.435	0.441
6/4/19	14:50	171	30	13	62.5%	40.00	0.15	-0.03	0.356	0.436	0.389	0.395
6/4/19	14:50	171	31	13	62.5%	50.00	0.03	-0.10	0.324	0.431	0.340	0.368

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/4/19	14:50	171	32	13	75%	9.99	-0.03	0.05	0.546	0.555	0.536	0.546
6/4/19	14:50	171	33	13	75%	20.00	0.00	0.05	0.447	0.563	0.501	0.505
6/4/19	14:50	171	34	13	75%	30.00	0.05	0.05	0.396	0.495	0.441	0.446
6/4/19	14:50	171	35	13	75%	40.00	0.15	-0.03	0.361	0.441	0.391	0.399
6/4/19	14:50	171	36	13	75%	50.00	0.03	-0.11	0.325	0.425	0.332	0.364
6/4/19	14:50	171	37	13	87.5%	9.99	-0.03	0.05	0.573	0.562	0.552	0.563
6/4/19	14:50	171	38	13	87.5%	20.00	0.00	0.04	0.451	0.568	0.500	0.509
6/4/19	14:50	171	39	13	87.5%	30.00	0.04	0.05	0.405	0.491	0.443	0.448
6/4/19	14:50	171	40	13	87.5%	40.00	0.13	-0.04	0.360	0.442	0.396	0.401
6/4/19	14:50	171	41	13	87.5%	50.00	0.03	-0.11	0.324	0.431	0.338	0.368
6/4/19	14:50	171	42	13	max	9.95	-0.03	0.05	0.591	0.561	0.546	0.566
6/4/19	14:50	171	43	13	max	20.00	0.00	0.03	0.452	0.563	0.508	0.510
6/4/19	14:50	171	44	13	max	30.00	0.04	0.05	0.403	0.493	0.438	0.446
6/4/19	14:50	171	45	13	max	40.00	0.13	-0.03	0.362	0.446	0.395	0.403
6/4/19	14:50	171	46	13	max	50.00	0.03	-0.11	0.327	0.432	0.343	0.370
6/6/19	8:25	172	2	13	max	10.02	-0.01	0.08	0.622	0.549	0.560	0.578
6/6/19	8:25	172	3	1	max	9.96	0.10	0.19	0.769	0.985	0.559	0.791
6/6/19	8:25	172	4	2	max	10.00	-0.03	-0.09	0.849	0.807	0.608	0.762
6/6/19	8:25	172	5	3	max	10.10	0.03	0.17	0.652	0.817	0.579	0.690
6/6/19	8:25	172	6	4	max	10.10	0.02	0.03	0.773	1.030	0.760	0.862
6/6/19	8:25	172	7	5	max	10.02	0.03	0.10	0.549	0.583	0.538	0.557
6/6/19	8:25	172	8	6	max	9.98	0.02	0.02	0.633	0.580	0.490	0.570
6/6/19	8:25	172	9	7	max	10.10	-0.01	0.04	0.515	0.452	0.474	0.481
6/6/19	8:25	172	10	8	max	10.10	0.12	0.14	0.623	0.547	0.638	0.604
6/6/19	8:25	172	11	9	max	10.02	0.13	0.00	0.598	0.725	0.542	0.626
6/6/19	8:25	172	12	10	max	10.10	0.34	0.08	0.607	0.821	0.649	0.699
6/6/19	8:25	172	13	11	max	10.10	0.01	0.10	0.679	0.769	0.611	0.690
6/6/19	8:25	172	14	12	max	10.10	-0.01	-0.04	0.634	0.545	0.714	0.635

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	8:25	172	15	13	max	10.02	-0.01	0.09	0.588	0.546	0.545	0.560
6/6/19	8:25	172	16	14	max	10.02	0.04	0.18	0.575	0.528	0.610	0.572
6/6/19	8:25	172	17	15	max	10.02	0.08	0.13	0.717	0.864	0.566	0.726
6/6/19	8:25	172	18	16	max	10.00	0.03	0.16	0.831	0.901	0.651	0.801
6/6/19	8:25	172	19	17	max	10.10	-0.37	0.05	0.999	0.912	0.711	0.882
6/6/19	8:25	172	20	18	max	10.02	0.09	0.10	0.587	0.510	0.596	0.565
6/6/19	8:25	172	21	19	max	10.02	0.13	0.12	0.619	0.632	0.462	0.576
6/6/19	8:25	172	22	20	max	10.02	-0.02	0.11	0.649	0.743	0.622	0.673
6/6/19	8:25	172	23	21	max	9.92	0.10	0.03	0.788	0.690	0.646	0.710
6/6/19	8:25	172	24	22	max	10.10	-0.02	-0.19	1.050	0.698	0.805	0.862
6/6/19	8:25	172	25	23	max	10.10	0.03	0.13	0.709	0.991	0.834	0.853
6/6/19	8:25	172	26	24	max	10.10	-0.10	0.56	0.844	1.210	0.757	0.959
6/6/19	8:25	172	27	25	max	10.30	0.02	-0.17	0.852	0.883	1.050	0.933
6/6/19	8:25	172	28	13	max	10.02	0.00	0.08	0.620	0.547	0.556	0.575
6/6/19	9:04	173	2	13	max	25.70	0.06	0.03	0.437	0.534	0.485	0.487
6/6/19	9:04	173	3	1	max	25.30	0.31	0.03	0.470	0.760	0.445	0.577
6/6/19	9:04	173	4	2	max	25.40	0.02	-0.03	0.351	0.348	0.500	0.406
6/6/19	9:04	173	5	3	max	25.60	0.73	0.05	0.363	0.516	0.399	0.431
6/6/19	9:04	173	6	4	max	25.70	0.68	0.47	0.369	0.479	0.456	0.437
6/6/19	9:04	173	7	5	max	25.90	0.03	0.12	0.431	0.507	0.465	0.469
6/6/19	9:04	173	8	6	max	25.30	0.03	0.19	0.356	0.486	0.452	0.435
6/6/19	9:04	173	9	7	max	25.50	0.06	-0.04	0.369	0.462	0.401	0.412
6/6/19	9:04	173	10	8	max	25.60	0.51	0.19	0.353	0.496	0.392	0.418
6/6/19	9:04	173	11	9	max	25.80	0.31	-0.08	0.438	0.511	0.512	0.488
6/6/19	9:04	173	12	10	max	25.90	0.73	-0.02	0.366	0.443	0.486	0.434
6/6/19	9:04	173	13	11	max	25.40	0.14	0.09	0.467	0.652	0.481	0.540
6/6/19	9:04	173	14	12	max	25.50	0.07	-0.03	0.435	0.448	0.537	0.476
6/6/19	9:04	173	15	13	max	25.70	0.07	0.02	0.448	0.526	0.498	0.492

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	9:04	173	16	14	max	25.80	0.03	0.07	0.411	0.488	0.462	0.455
6/6/19	9:04	173	17	15	max	26.10	0.03	0.09	0.448	0.674	0.439	0.531
6/6/19	9:04	173	18	16	max	25.40	0.15	0.02	0.395	0.571	0.409	0.465
6/6/19	9:04	173	19	17	max	25.50	-0.02	0.11	0.375	0.521	0.426	0.445
6/6/19	9:04	173	20	18	max	25.80	0.14	0.00	0.359	0.429	0.417	0.403
6/6/19	9:04	173	21	19	max	25.80	0.17	0.13	0.361	0.470	0.411	0.416
6/6/19	9:04	173	22	20	max	26.00	-0.05	-0.04	0.355	0.510	0.396	0.425
6/6/19	9:04	173	23	21	max	25.40	0.02	0.03	0.394	0.478	0.486	0.455
6/6/19	9:04	173	24	22	max	25.60	0.18	-0.35	0.408	0.533	0.509	0.486
6/6/19	9:04	173	25	23	max	25.70	0.00	0.30	0.355	0.442	0.407	0.403
6/6/19	9:04	173	26	24	max	25.80	-0.03	0.76	0.373	0.439	0.460	0.426
6/6/19	9:04	173	27	25	max	26.10	0.13	-0.03	0.456	0.632	0.453	0.520
6/6/19	9:04	173	28	13	max	25.70	0.10	0.04	0.438	0.535	0.486	0.488
6/6/19	9:36	175	2	13	none	5.03	0.02	0.01	1.050	0.772	0.739	0.864
6/6/19	9:36	175	3	13	none	10.00	0.02	0.07	0.511	0.538	0.552	0.534
6/6/19	9:36	175	4	13	none	20.00	0.10	0.06	0.449	0.612	0.461	0.513
6/6/19	9:36	175	5	13	none	30.00	0.15	0.10	0.390	0.481	0.434	0.437
6/6/19	9:36	175	6	13	none	40.00	0.03	-0.05	0.349	0.431	0.380	0.388
6/6/19	9:36	175	7	13	none	50.00	0.47	-0.14	0.324	0.411	0.324	0.355
6/6/19	9:36	175	9	13	12.5%	5.03	0.01	0.02	1.170	0.812	0.737	0.926
6/6/19	9:36	175	10	13	12.5%	10.00	0.01	0.07	0.505	0.540	0.540	0.529
6/6/19	9:36	175	11	13	12.5%	20.00	0.09	0.06	0.449	0.601	0.477	0.513
6/6/19	9:36	175	12	13	12.5%	30.00	0.13	0.08	0.392	0.485	0.429	0.437
6/6/19	9:36	175	13	13	12.5%	40.00	0.03	-0.02	0.349	0.433	0.378	0.388
6/6/19	9:36	175	14	13	12.5%	50.00	0.47	-0.14	0.327	0.408	0.325	0.355
6/6/19	9:36	175	15	13	25%	5.02	0.01	0.01	1.020	0.773	0.712	0.845
6/6/19	9:36	175	16	13	25%	10.00	0.00	0.07	0.498	0.551	0.528	0.526
6/6/19	9:36	175	17	13	25%	20.00	0.10	0.05	0.464	0.611	0.497	0.528

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	9:36	175	18	13	25%	30.00	0.14	0.09	0.395	0.499	0.430	0.444
6/6/19	9:36	175	19	13	25%	40.00	0.03	-0.03	0.348	0.442	0.378	0.391
6/6/19	9:36	175	20	13	25%	50.00	0.46	-0.13	0.326	0.417	0.329	0.360
6/6/19	9:36	175	21	13	37.5%	5.03	0.01	0.01	1.060	0.770	0.770	0.877
6/6/19	9:36	175	22	13	37.5%	10.00	-0.01	0.07	0.498	0.547	0.515	0.521
6/6/19	9:36	175	23	13	37.5%	20.00	0.07	0.07	0.456	0.595	0.500	0.520
6/6/19	9:36	175	24	13	37.5%	30.00	0.13	0.10	0.393	0.496	0.434	0.443
6/6/19	9:36	175	25	13	37.5%	40.00	0.03	-0.02	0.352	0.447	0.388	0.397
6/6/19	9:36	175	26	13	37.5%	50.00	0.48	-0.13	0.325	0.424	0.334	0.364
6/6/19	9:36	175	27	13	50%	5.01	0.01	0.01	1.110	0.756	0.766	0.891
6/6/19	9:36	175	28	13	50%	10.00	-0.01	0.08	0.503	0.544	0.512	0.520
6/6/19	9:36	175	29	13	50%	20.00	0.07	0.06	0.456	0.590	0.501	0.519
6/6/19	9:36	175	30	13	50%	30.00	0.13	0.09	0.398	0.500	0.438	0.447
6/6/19	9:36	175	31	13	50%	40.00	0.03	-0.03	0.356	0.449	0.388	0.399
6/6/19	9:36	175	32	13	50%	50.00	0.46	-0.12	0.329	0.424	0.338	0.367
6/6/19	9:36	175	33	13	62.5%	5.01	0.01	0.01	1.160	0.765	0.771	0.915
6/6/19	9:36	175	34	13	62.5%	10.00	-0.01	0.07	0.535	0.545	0.515	0.532
6/6/19	9:36	175	35	13	62.5%	20.00	0.07	0.06	0.466	0.600	0.504	0.526
6/6/19	9:36	175	36	13	62.5%	30.00	0.13	0.09	0.400	0.505	0.439	0.450
6/6/19	9:36	175	37	13	62.5%	40.00	0.03	-0.02	0.358	0.452	0.392	0.402
6/6/19	9:36	175	38	13	62.5%	50.00	0.44	-0.11	0.330	0.429	0.337	0.368
6/6/19	9:36	175	39	13	75%	5.05	0.01	0.00	1.210	0.741	0.769	0.931
6/6/19	9:36	175	40	13	75%	10.00	-0.01	0.07	0.547	0.552	0.539	0.546
6/6/19	9:36	175	41	13	75%	20.00	0.06	0.06	0.464	0.602	0.515	0.530
6/6/19	9:36	175	42	13	75%	30.00	0.13	0.08	0.403	0.507	0.442	0.453
6/6/19	9:36	175	43	13	75%	40.00	0.03	-0.02	0.356	0.458	0.394	0.405
6/6/19	9:36	175	44	13	75%	50.00	0.42	-0.11	0.334	0.434	0.344	0.373
6/6/19	9:36	175	45	13	87.5%	5.00	0.01	0.00	1.250	0.745	0.783	0.953
6/6/19	9:36	175	46	13	87.5%	10.00	-0.01	0.06	0.552	0.543	0.550	0.548

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	9:36	175	47	13	87.5%	20.00	0.04	0.06	0.458	0.565	0.523	0.518
6/6/19	9:36	175	48	13	87.5%	30.00	0.12	0.08	0.411	0.504	0.445	0.455
6/6/19	9:36	175	49	13	87.5%	40.00	0.03	-0.02	0.365	0.462	0.403	0.412
6/6/19	9:36	175	50	13	87.5%	50.00	0.46	-0.13	0.336	0.441	0.347	0.378
6/6/19	9:36	175	51	13	max	5.04	0.01	0.00	1.650	0.786	0.821	1.160
6/6/19	9:36	175	52	13	max	10.00	0.00	0.07	0.590	0.541	0.553	0.562
6/6/19	9:36	175	53	13	max	20.00	0.06	0.06	0.476	0.583	0.520	0.528
6/6/19	9:36	175	54	13	max	30.00	0.13	0.08	0.404	0.510	0.444	0.455
6/6/19	9:36	175	55	13	max	40.00	0.03	-0.02	0.363	0.465	0.402	0.412
6/6/19	9:36	175	56	13	max	50.00	0.44	-0.12	0.337	0.441	0.348	0.378
6/6/19	10:56	176	2	13	none	5.03	0.01	0.01	1.050	0.784	0.731	0.865
6/6/19	10:56	176	3	1	none	4.95	0.11	0.09	1.510	1.180	0.979	1.240
6/6/19	10:56	176	4	2	none	5.00	0.00	-0.04	1.210	0.584	0.889	0.929
6/6/19	10:56	176	5	3	none	5.00	0.02	0.06	1.120	0.814	0.822	0.928
6/6/19	10:56	176	6	4	none	5.03	0.02	0.15	1.530	1.350	1.040	1.320
6/6/19	10:56	176	7	5	none	5.07	-0.01	0.05	1.130	0.714	0.728	0.880
6/6/19	10:56	176	8	6	none	4.94	-0.01	0.13	1.230	0.655	0.622	0.879
6/6/19	10:56	176	9	7	none	5.00	0.03	0.01	1.140	0.491	0.681	0.816
6/6/19	10:56	176	10	8	none	5.02	0.08	0.03	1.040	0.630	0.603	0.785
6/6/19	10:56	176	11	9	none	5.05	0.08	0.03	1.120	0.724	0.678	0.866
6/6/19	10:56	176	12	10	none	5.04	0.14	0.05	1.220	0.757	0.862	0.965
6/6/19	10:56	176	13	11	none	4.98	0.01	0.08	1.190	0.923	0.685	0.954
6/6/19	10:56	176	14	12	none	5.03	0.00	0.00	1.220	0.726	0.939	0.981
6/6/19	10:56	176	15	13	none	5.05	0.01	0.01	1.040	0.766	0.724	0.856
6/6/19	10:56	176	16	14	none	5.05	0.05	0.07	1.150	0.757	0.798	0.920
6/6/19	10:56	176	17	15	none	5.09	0.06	0.05	1.250	1.150	0.750	1.070
6/6/19	10:56	176	18	16	none	4.96	0.05	0.11	1.200	0.823	0.725	0.938
6/6/19	10:56	176	19	17	none	5.00	-0.13	0.07	1.120	0.707	0.779	0.889

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	10:56	176	20	18	none	5.04	0.05	0.05	0.974	0.519	0.623	0.732
6/6/19	10:56	176	21	19	none	5.04	0.06	0.05	1.070	0.626	0.598	0.797
6/6/19	10:56	176	22	20	none	5.08	-0.04	0.02	1.230	0.817	0.851	0.983
6/6/19	10:56	176	23	21	none	4.96	0.07	0.13	1.180	0.664	0.696	0.881
6/6/19	10:56	176	24	22	none	5.04	-0.04	-0.09	1.130	0.693	0.788	0.891
6/6/19	10:56	176	25	23	none	5.04	0.00	0.05	0.999	0.744	0.733	0.834
6/6/19	10:56	176	26	24	none	5.03	-0.08	0.03	1.500	1.390	1.100	1.340
6/6/19	10:56	176	27	25	none	5.14	0.05	-0.11	1.320	0.815	1.110	1.100
6/6/19	10:56	176	28	13	none	5.04	0.02	0.01	1.060	0.752	0.792	0.881
6/6/19	11:22	177	2	13	max	4.96	0.02	0.00	1.480	0.784	0.829	1.080
6/6/19	11:22	177	3	1	max	4.87	0.07	0.10	1.840	1.380	0.945	1.430
6/6/19	11:22	177	4	2	max	4.92	0.00	-0.04	1.600	0.746	0.904	1.150
6/6/19	11:22	177	5	3	max	4.93	0.15	0.08	1.580	1.330	1.080	1.340
6/6/19	11:22	177	6	4	max	4.93	0.13	0.12	1.590	1.360	1.020	1.340
6/6/19	11:22	177	7	5	max	5.03	0.03	0.05	1.700	1.020	0.847	1.240
6/6/19	11:22	177	8	6	max	4.89	0.00	0.09	1.450	0.782	0.860	1.080
6/6/19	11:22	177	9	7	max	4.96	0.02	0.01	1.480	0.659	0.729	1.030
6/6/19	11:22	177	10	8	max	4.96	0.07	0.04	1.410	0.826	1.030	1.110
6/6/19	11:22	177	11	9	max	4.98	0.06	-0.02	1.430	1.010	0.921	1.140
6/6/19	11:22	177	12	10	max	4.96	0.16	0.03	1.520	0.935	0.900	1.150
6/6/19	11:22	177	13	11	max	4.92	0.01	0.05	1.660	1.080	0.869	1.250
6/6/19	11:22	177	14	12	max	4.97	0.00	-0.02	1.470	0.780	0.949	1.110
6/6/19	11:22	177	15	13	max	4.96	0.02	0.01	1.520	0.754	0.812	1.080
6/6/19	11:22	177	16	14	max	4.99	0.03	0.04	1.650	0.817	0.922	1.190
6/6/19	11:22	177	17	15	max	5.03	0.04	0.06	1.630	1.220	0.899	1.280
6/6/19	11:22	177	18	16	max	4.95	0.05	0.07	1.820	1.260	0.850	1.370
6/6/19	11:22	177	19	17	max	4.99	-0.15	0.04	1.670	1.390	1.180	1.430
6/6/19	11:22	177	20	18	max	5.02	0.04	0.04	1.590	0.998	1.030	1.240

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	11:22	177	21	19	max	4.99	0.07	0.06	1.600	0.899	0.798	1.150
6/6/19	11:22	177	22	20	max	5.06	-0.04	0.03	1.870	1.470	1.070	1.500
6/6/19	11:22	177	23	21	max	4.95	0.07	0.11	2.010	1.310	1.010	1.500
6/6/19	11:22	177	24	22	max	5.04	-0.01	-0.10	1.960	1.110	1.180	1.470
6/6/19	11:22	177	25	23	max	4.96	0.01	0.04	1.660	1.420	1.300	1.470
6/6/19	11:22	177	26	24	max	5.03	-0.06	0.03	2.110	1.900	1.700	1.910
6/6/19	11:22	177	27	25	max	5.13	0.03	-0.08	2.070	1.960	1.570	1.880
6/6/19	11:22	177	28	13	max	4.96	0.02	-0.01	1.500	0.800	0.829	1.090
6/6/19	13:34	178	2	13	none	51.40	0.35	-0.13	0.315	0.412	0.318	0.351
6/6/19	13:34	178	3	1	none	50.40	0.63	0.60	0.607	0.975	0.502	0.724
6/6/19	13:34	178	4	2	none	50.70	0.65	-0.03	0.325	0.432	0.358	0.374
6/6/19	13:34	178	5	3	none	51.10	1.52	-0.12	0.387	0.409	0.475	0.425
6/6/19	13:34	178	6	4	none	51.30	1.49	0.54	0.314	0.401	0.366	0.362
6/6/19	13:34	178	7	5	none	51.80	0.92	-0.06	0.408	0.393	0.488	0.432
6/6/19	13:34	178	8	6	none	50.50	0.02	0.03	0.363	0.441	0.401	0.403
6/6/19	13:34	178	9	7	none	51.00	0.03	-0.32	0.027	0.322	0.030	0.030
6/6/19	13:34	178	10	8	none	51.30	0.82	0.10	0.026	0.364	0.027	0.304
6/6/19	13:34	178	11	9	none	51.50	1.10	-0.03	0.029	0.364	0.313	0.325
6/6/19	13:34	178	12	10	none	51.90	0.86	-0.35	0.029	0.363	0.030	0.316
6/6/19	13:34	178	13	11	none	50.50	0.35	0.03	0.344	0.457	0.371	0.394
6/6/19	13:34	178	14	12	none	51.10	0.31	-0.18	0.311	0.399	0.324	0.347
6/6/19	13:34	178	15	13	none	51.40	0.40	-0.15	0.321	0.406	0.322	0.352
6/6/19	13:34	178	16	14	none	51.60	0.46	-0.45	0.333	0.417	0.369	0.375
6/6/19	13:34	178	17	15	none	52.10	0.55	-0.10	0.341	0.490	0.328	0.393
6/6/19	13:34	178	18	16	none	50.60	0.43	0.47	0.370	0.516	0.374	0.425
6/6/19	13:34	178	19	17	none	51.00	-0.05	0.02	0.308	0.375	0.374	0.354
6/6/19	13:34	178	20	18	none	51.30	0.03	-0.06	0.027	0.358	0.026	0.300
6/6/19	13:34	178	21	19	none	51.60	0.12	0.06	0.027	0.329	0.028	0.029

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	13:34	178	22	20	none	52.00	0.43	0.05	0.030	0.353	0.314	0.322
6/6/19	13:34	178	23	21	none	50.70	0.45	0.49	0.336	0.560	0.345	0.426
6/6/19	13:34	178	24	22	none	51.00	0.02	-0.44	0.029	0.417	0.314	0.346
6/6/19	13:34	178	25	23	none	51.30	0.06	0.03	0.332	0.403	0.381	0.373
6/6/19	13:34	178	26	24	none	51.60	0.14	1.12	0.330	0.409	0.355	0.366
6/6/19	13:34	178	27	25	none	51.90	0.32	-0.39	0.456	0.572	0.515	0.516
6/6/19	13:34	178	28	13	none	51.40	0.48	-0.06	0.317	0.407	0.321	0.351
6/6/19	14:01	179	2	13	max	51.40	0.37	-0.09	0.327	0.443	0.344	0.375
6/6/19	14:01	179	3	1	max	50.30	0.66	0.53	0.578	0.984	0.535	0.728
6/6/19	14:01	179	4	2	max	50.70	0.63	-0.02	0.336	0.459	0.374	0.393
6/6/19	14:01	179	5	3	max	51.10	1.48	-0.09	0.385	0.465	0.470	0.442
6/6/19	14:01	179	6	4	max	51.40	1.43	0.51	0.305	0.377	0.367	0.351
6/6/19	14:01	179	7	5	max	51.80	0.84	-0.13	0.402	0.398	0.497	0.435
6/6/19	14:01	179	8	6	max	50.50	0.02	0.03	0.372	0.490	0.413	0.428
6/6/19	14:01	179	9	7	max	51.00	0.03	-0.03	0.029	0.361	0.317	0.324
6/6/19	14:01	179	10	8	max	51.30	0.96	0.16	0.028	0.422	0.029	0.336
6/6/19	14:01	179	11	9	max	51.50	1.13	-0.03	0.029	0.397	0.315	0.338
6/6/19	14:01	179	12	10	max	51.90	0.81	-0.31	0.030	0.379	0.313	0.331
6/6/19	14:01	179	13	11	max	50.60	0.03	0.03	0.343	0.469	0.377	0.400
6/6/19	14:01	179	14	12	max	51.10	0.31	-0.13	0.307	0.391	0.318	0.341
6/6/19	14:01	179	15	13	max	51.40	0.38	-0.09	0.333	0.443	0.345	0.377
6/6/19	14:01	179	16	14	max	51.60	0.48	-0.42	0.335	0.441	0.370	0.384
6/6/19	14:01	179	17	15	max	52.10	0.51	-0.09	0.345	0.497	0.334	0.399
6/6/19	14:01	179	18	16	max	50.70	0.38	0.51	0.345	0.505	0.356	0.409
6/6/19	14:01	179	19	17	max	51.10	-0.13	0.03	0.302	0.397	0.374	0.360
6/6/19	14:01	179	20	18	max	51.40	0.11	-0.04	0.027	0.352	0.027	0.301
6/6/19	14:01	179	21	19	max	51.60	0.12	0.05	0.027	0.331	0.029	0.030
6/6/19	14:01	179	22	20	max	52.00	0.38	0.03	0.029	0.363	0.338	0.332

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/6/19	14:01	179	23	21	max	50.70	0.44	0.53	0.345	0.569	0.367	0.439
6/6/19	14:01	179	24	22	max	51.00	0.02	-0.50	0.301	0.421	0.325	0.353
6/6/19	14:01	179	25	23	max	51.40	0.02	0.02	0.327	0.420	0.377	0.377
6/6/19	14:01	179	26	24	max	51.60	0.12	1.12	0.342	0.426	0.372	0.382
6/6/19	14:01	179	27	25	max	51.90	0.36	-0.41	0.461	0.596	0.540	0.535
6/6/19	14:01	179	28	13	max	51.40	0.44	-0.06	0.331	0.448	0.349	0.379
6/8/19	14:28	180	2	13	none	25.70	0.05	0.05	0.424	0.536	0.453	0.473
6/8/19	14:28	180	3	1	none	25.20	0.35	0.36	0.521	0.854	0.411	0.625
6/8/19	14:28	180	4	2	none	25.40	0.02	-0.02	0.333	0.347	0.472	0.389
6/8/19	14:28	180	5	3	none	25.50	0.69	0.00	0.338	0.465	0.388	0.401
6/8/19	14:28	180	6	4	none	25.70	0.66	0.47	0.380	0.474	0.454	0.438
6/8/19	14:28	180	7	5	none	25.90	0.09	0.17	0.466	0.525	0.498	0.497
6/8/19	14:28	180	8	6	none	25.30	0.02	0.02	0.351	0.389	0.428	0.391
6/8/19	14:28	180	9	7	none	25.50	0.06	-0.02	0.360	0.486	0.389	0.415
6/8/19	14:28	180	10	8	none	25.60	0.48	0.15	0.331	0.439	0.368	0.382
6/8/19	14:28	180	11	9	none	25.80	0.16	0.01	0.423	0.531	0.485	0.481
6/8/19	14:28	180	12	10	none	25.80	0.74	-0.17	0.370	0.451	0.480	0.436
6/8/19	14:28	180	13	11	none	25.30	0.07	0.08	0.452	0.615	0.483	0.521
6/8/19	14:28	180	14	12	none	25.40	0.03	-0.02	0.409	0.478	0.470	0.454
6/8/19	14:28	180	15	13	none	25.60	0.07	0.05	0.417	0.530	0.454	0.469
6/8/19	14:28	180	16	14	none	25.80	0.02	0.15	0.413	0.474	0.446	0.445
6/8/19	14:28	180	17	15	none	26.00	0.03	0.14	0.447	0.678	0.440	0.533
6/8/19	14:28	180	18	16	none	25.30	0.13	0.03	0.403	0.560	0.400	0.461
6/8/19	14:28	180	19	17	none	25.50	-0.03	0.13	0.357	0.430	0.420	0.404
6/8/19	14:28	180	20	18	none	25.70	0.13	0.04	0.371	0.520	0.403	0.436
6/8/19	14:28	180	21	19	none	25.70	0.15	0.11	0.381	0.440	0.434	0.419
6/8/19	14:28	180	22	20	none	25.90	-0.12	-0.06	0.341	0.460	0.392	0.401
6/8/19	14:28	180	23	21	none	25.30	0.03	0.31	0.390	0.540	0.470	0.471

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/8/19	14:28	180	24	22	none	25.40	0.15	-0.40	0.395	0.573	0.479	0.488
6/8/19	14:28	180	25	23	none	25.60	0.03	0.03	0.351	0.398	0.427	0.393
6/8/19	14:28	180	26	24	none	25.70	-0.06	0.73	0.368	0.400	0.444	0.405
6/8/19	14:28	180	27	25	none	26.00	0.02	-0.03	0.429	0.545	0.438	0.474
6/8/19	14:28	180	28	13	none	25.60	0.12	0.06	0.417	0.521	0.452	0.465
6/10/19	10:12	184	2	13	none	5.00	0.00	0.02	1.150	0.767	0.830	0.933
6/10/19	10:12	184	3	13	none	10.00	-0.02	0.08	0.509	0.586	0.525	0.541
6/10/19	10:12	184	4	13	none	20.00	0.01	0.08	0.438	0.585	0.466	0.501
6/10/19	10:12	184	5	13	none	30.00	0.03	0.08	0.382	0.475	0.419	0.427
6/10/19	10:12	184	6	13	none	40.00	0.08	0.02	0.350	0.425	0.374	0.384
6/10/19	10:12	184	7	13	none	50.00	0.02	-0.08	0.317	0.404	0.320	0.349
6/10/19	10:12	184	8	13	12.5%	5.01	0.00	0.01	1.120	0.781	0.789	0.910
6/10/19	10:12	184	9	13	12.5%	10.00	-0.02	0.07	0.504	0.580	0.528	0.539
6/10/19	10:12	184	10	13	12.5%	20.00	0.04	0.06	0.443	0.589	0.480	0.508
6/10/19	10:12	184	11	13	12.5%	30.00	0.04	0.08	0.388	0.479	0.426	0.433
6/10/19	10:12	184	12	13	12.5%	40.00	0.12	0.02	0.348	0.420	0.376	0.383
6/10/19	10:12	184	13	13	12.5%	50.00	0.02	-0.08	0.317	0.399	0.314	0.346
6/10/19	10:12	184	14	13	25%	4.98	0.01	0.00	1.150	0.812	0.823	0.943
6/10/19	10:12	184	15	13	25%	10.00	-0.04	0.07	0.496	0.585	0.509	0.532
6/10/19	10:12	184	16	13	25%	20.00	0.03	0.05	0.446	0.590	0.481	0.510
6/10/19	10:12	184	17	13	25%	30.00	0.05	0.07	0.395	0.485	0.430	0.438
6/10/19	10:12	184	18	13	25%	40.00	0.13	0.00	0.349	0.432	0.377	0.387
6/10/19	10:12	184	19	13	25%	50.00	0.02	-0.08	0.312	0.415	0.321	0.352
6/10/19	10:12	184	20	13	37.5%	4.99	0.00	-0.01	1.150	0.802	0.800	0.932
6/10/19	10:12	184	21	13	37.5%	10.00	-0.03	0.06	0.507	0.591	0.520	0.540
6/10/19	10:12	184	22	13	37.5%	20.00	0.03	0.06	0.442	0.586	0.482	0.507
6/10/19	10:12	184	23	13	37.5%	30.00	0.05	0.06	0.391	0.489	0.428	0.438
6/10/19	10:12	184	24	13	37.5%	40.00	0.14	-0.02	0.352	0.432	0.379	0.389

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/10/19	10:12	184	25	13	37.5%	50.00	0.02	-0.09	0.323	0.415	0.328	0.358
6/10/19	10:12	184	26	13	50%	4.99	0.00	-0.01	1.220	0.793	0.818	0.965
6/10/19	10:12	184	27	13	50%	10.00	-0.04	0.06	0.503	0.591	0.517	0.539
6/10/19	10:12	184	28	13	50%	20.00	0.02	0.05	0.458	0.586	0.497	0.517
6/10/19	10:12	184	29	13	50%	30.00	0.03	0.06	0.398	0.494	0.432	0.443
6/10/19	10:12	184	30	13	50%	40.00	0.12	-0.01	0.351	0.439	0.378	0.391
6/10/19	10:12	184	31	13	50%	50.00	0.02	-0.08	0.322	0.416	0.323	0.356
6/10/19	10:12	184	32	13	62.5%	5.04	0.00	-0.02	1.210	0.791	0.836	0.966
6/10/19	10:12	184	33	13	62.5%	10.00	-0.04	0.05	0.526	0.586	0.531	0.549
6/10/19	10:12	184	34	13	62.5%	20.00	0.02	0.05	0.458	0.598	0.497	0.521
6/10/19	10:12	184	35	13	62.5%	30.00	0.02	0.06	0.397	0.497	0.426	0.442
6/10/19	10:12	184	36	13	62.5%	40.00	0.11	-0.01	0.354	0.445	0.383	0.396
6/10/19	10:12	184	37	13	62.5%	50.00	0.02	-0.09	0.328	0.426	0.327	0.364
6/10/19	10:12	184	38	13	75%	4.99	0.00	-0.03	1.310	0.807	0.844	1.010
6/10/19	10:12	184	39	13	75%	10.00	-0.04	0.05	0.572	0.593	0.542	0.569
6/10/19	10:12	184	40	13	75%	20.00	0.01	0.05	0.462	0.594	0.495	0.520
6/10/19	10:12	184	41	13	75%	30.00	0.02	0.06	0.400	0.496	0.430	0.444
6/10/19	10:12	184	42	13	75%	40.00	0.11	-0.02	0.356	0.450	0.383	0.398
6/10/19	10:12	184	43	13	75%	50.00	0.02	-0.10	0.330	0.439	0.332	0.370
6/10/19	10:12	184	44	13	87.5%	5.02	-0.01	-0.04	1.600	0.818	0.874	1.160
6/10/19	10:12	184	45	13	87.5%	9.99	-0.04	0.04	0.570	0.587	0.543	0.567
6/10/19	10:12	184	46	13	87.5%	20.00	-0.01	0.04	0.453	0.574	0.497	0.511
6/10/19	10:12	184	47	13	87.5%	30.00	0.02	0.05	0.401	0.495	0.434	0.445
6/10/19	10:12	184	48	13	87.5%	40.00	0.10	-0.03	0.360	0.445	0.383	0.398
6/10/19	10:12	184	49	13	87.5%	50.00	0.02	-0.10	0.327	0.439	0.333	0.370
6/10/19	10:12	184	50	13	max	5.03	-0.01	-0.05	1.580	0.842	0.902	1.160
6/10/19	10:12	184	51	13	max	10.00	-0.04	0.03	0.598	0.584	0.570	0.584
6/10/19	10:12	184	52	13	max	20.00	-0.02	0.03	0.453	0.569	0.496	0.508
6/10/19	10:12	184	53	13	max	30.00	0.02	0.04	0.403	0.497	0.433	0.446

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/10/19	10:12	184	54	13	max	40.00	0.10	-0.04	0.358	0.446	0.383	0.397
6/10/19	10:12	184	55	13	max	50.00	0.19	-0.10	0.332	0.443	0.339	0.375
6/10/19	12:41	185	2	13	none	10.30	-0.02	0.08	0.493	0.582	0.514	0.531
6/10/19	12:41	185	3	1	none	10.00	0.18	0.02	0.859	0.991	0.621	0.838
6/10/19	12:41	185	4	2	none	10.10	-0.18	-0.07	0.478	0.595	0.486	0.522
6/10/19	12:41	185	5	3	none	10.10	0.03	0.16	0.522	0.595	0.467	0.530
6/10/19	12:41	185	6	4	none	10.02	0.33	0.03	1.190	1.480	0.824	1.200
6/10/19	12:41	185	7	5	none	10.30	-0.14	0.09	0.515	0.621	0.505	0.550
6/10/19	12:41	185	8	6	none	10.00	-0.04	0.02	0.505	0.570	0.460	0.514
6/10/19	12:41	185	9	7	none	10.02	-0.07	0.05	0.411	0.430	0.448	0.430
6/10/19	12:41	185	10	8	none	10.10	0.16	0.13	0.434	0.447	0.430	0.437
6/10/19	12:41	185	11	9	none	10.30	0.08	0.06	0.587	0.747	0.510	0.623
6/10/19	12:41	185	12	10	none	10.02	0.02	0.19	0.599	0.769	0.658	0.679
6/10/19	12:41	185	13	11	none	10.10	-0.09	0.11	0.634	0.752	0.639	0.677
6/10/19	12:41	185	14	12	none	10.02	-0.01	-0.03	0.626	0.527	0.795	0.659
6/10/19	12:41	185	15	13	none	10.02	0.02	0.07	0.504	0.560	0.523	0.530
6/10/19	12:41	185	16	14	none	10.30	0.05	0.19	0.538	0.546	0.570	0.552
6/10/19	12:41	185	17	15	none	10.40	0.02	0.05	0.664	0.888	0.509	0.704
6/10/19	12:41	185	18	16	none	10.00	0.02	0.02	0.606	0.794	0.537	0.654
6/10/19	12:41	185	19	17	none	10.10	-0.45	0.07	0.809	0.508	0.542	0.634
6/10/19	12:41	185	20	18	none	10.02	0.11	0.09	0.416	0.388	0.399	0.401
6/10/19	12:41	185	21	19	none	10.30	0.08	0.09	0.451	0.431	0.408	0.430
6/10/19	12:41	185	22	20	none	10.30	-0.19	0.03	0.535	0.576	0.616	0.576
6/10/19	12:41	185	23	21	none	10.00	0.08	0.03	0.613	0.748	0.540	0.640
6/10/19	12:41	185	24	22	none	10.10	-0.05	-0.03	0.977	0.648	0.715	0.793
6/10/19	12:41	185	25	23	none	10.02	0.15	0.01	0.595	1.250	0.814	0.928
6/10/19	12:41	185	26	24	none	10.02	-0.02	0.57	1.100	1.340	0.904	1.130
6/10/19	12:41	185	27	25	none	10.50	0.07	-0.30	1.020	0.943	1.150	1.040

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/10/19	12:41	185	28	13	none	10.02	0.02	0.07	0.513	0.560	0.522	0.532
6/10/19	13:16	186	2	13	max	10.02	-0.01	0.06	0.628	0.548	0.543	0.575
6/10/19	13:16	186	3	1	max	10.00	0.08	0.17	0.779	0.957	0.560	0.782
6/10/19	13:16	186	4	2	max	10.10	-0.08	-0.07	0.648	0.826	0.592	0.696
6/10/19	13:16	186	5	3	max	10.10	0.03	0.17	0.664	0.932	0.685	0.770
6/10/19	13:16	186	6	4	max	10.10	0.03	0.03	1.050	1.430	0.865	1.140
6/10/19	13:16	186	7	5	max	10.30	-0.07	0.10	0.604	0.655	0.551	0.605
6/10/19	13:16	186	8	6	max	9.97	-0.03	0.19	0.612	0.613	0.488	0.574
6/10/19	13:16	186	9	7	max	10.10	-0.01	0.03	0.524	0.453	0.456	0.478
6/10/19	13:16	186	10	8	max	10.10	0.11	0.10	0.608	0.516	0.606	0.578
6/10/19	13:16	186	11	9	max	10.02	0.07	-0.02	0.589	0.629	0.520	0.581
6/10/19	13:16	186	12	10	max	10.02	0.40	0.05	0.507	0.926	0.652	0.716
6/10/19	13:16	186	13	11	max	10.10	-0.01	0.09	0.704	0.795	0.616	0.709
6/10/19	13:16	186	14	12	max	10.02	-0.04	-0.05	0.654	0.567	0.701	0.643
6/10/19	13:16	186	15	13	max	10.02	-0.01	0.05	0.565	0.546	0.550	0.554
6/10/19	13:16	186	16	14	max	10.02	0.00	0.16	0.560	0.530	0.562	0.551
6/10/19	13:16	186	17	15	max	10.30	0.12	0.13	0.666	0.819	0.532	0.683
6/10/19	13:16	186	18	16	max	10.10	0.05	0.15	0.745	0.842	0.560	0.725
6/10/19	13:16	186	19	17	max	10.10	-0.39	0.05	0.899	0.867	0.815	0.861
6/10/19	13:16	186	20	18	max	10.02	0.07	0.08	0.551	0.512	0.481	0.516
6/10/19	13:16	186	21	19	max	10.02	0.10	0.09	0.580	0.565	0.459	0.537
6/10/19	13:16	186	22	20	max	10.30	-0.17	0.08	0.617	0.670	0.690	0.660
6/10/19	13:16	186	23	21	max	9.99	0.09	0.03	0.730	0.742	0.643	0.706
6/10/19	13:16	186	24	22	max	10.10	-0.04	-0.02	0.950	0.717	0.774	0.820
6/10/19	13:16	186	25	23	max	10.02	0.05	0.05	0.697	1.030	0.871	0.875
6/10/19	13:16	186	26	24	max	10.10	-0.13	0.56	0.944	1.260	0.799	1.020
6/10/19	13:16	186	27	25	max	10.40	0.08	-0.02	0.967	0.940	1.090	1.000
6/10/19	13:16	186	28	13	max	10.02	0.01	0.05	0.617	0.541	0.548	0.570

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/10/19	13:48	187	2	13	none	10.30	0.01	0.08	0.504	0.558	0.521	0.528
6/10/19	13:48	187	3	1	none	10.00	0.18	0.19	0.819	0.922	0.618	0.797
6/10/19	13:48	187	4	2	none	10.10	-0.16	-0.07	0.507	0.636	0.501	0.552
6/10/19	13:48	187	5	3	none	10.10	0.02	0.14	0.493	0.565	0.443	0.503
6/10/19	13:48	187	6	4	none	10.02	0.43	0.03	1.210	1.440	0.820	1.190
6/10/19	13:48	187	7	5	none	10.30	-0.15	0.07	0.516	0.683	0.623	0.611
6/10/19	13:48	187	8	6	none	10.00	-0.06	0.02	0.501	0.545	0.413	0.489
6/10/19	13:48	187	9	7	none	10.02	-0.03	0.05	0.419	0.384	0.408	0.404
6/10/19	13:48	187	10	8	none	10.02	0.17	0.09	0.467	0.383	0.426	0.427
6/10/19	13:48	187	11	9	none	10.30	0.12	0.08	0.590	0.622	0.413	0.549
6/10/19	13:48	187	12	10	none	10.02	0.02	0.19	0.585	0.745	0.654	0.665
6/10/19	13:48	187	13	11	none	10.10	-0.09	0.12	0.648	0.722	0.642	0.672
6/10/19	13:48	187	14	12	none	10.02	-0.01	-0.03	0.653	0.519	0.807	0.670
6/10/19	13:48	187	15	13	none	10.30	0.02	0.08	0.517	0.559	0.523	0.533
6/10/19	13:48	187	16	14	none	10.30	0.04	0.02	0.554	0.553	0.555	0.554
6/10/19	13:48	187	17	15	none	10.40	0.04	0.07	0.663	0.841	0.487	0.679
6/10/19	13:48	187	18	16	none	10.10	0.08	0.19	0.588	0.687	0.493	0.595
6/10/19	13:48	187	19	17	none	10.10	-0.43	0.10	0.715	0.498	0.534	0.590
6/10/19	13:48	187	20	18	none	10.02	0.11	0.11	0.443	0.403	0.420	0.422
6/10/19	13:48	187	21	19	none	10.30	0.09	0.10	0.458	0.434	0.392	0.429
6/10/19	13:48	187	22	20	none	10.40	-0.18	0.05	0.515	0.559	0.567	0.547
6/10/19	13:48	187	23	21	none	10.00	0.11	0.03	0.602	0.684	0.558	0.617
6/10/19	13:48	187	24	22	none	10.10	-0.04	-0.02	0.947	0.675	0.710	0.787
6/10/19	13:48	187	25	23	none	10.02	0.18	0.02	0.633	1.190	0.740	0.887
6/10/19	13:48	187	26	24	none	10.02	-0.02	0.58	1.050	1.190	0.969	1.070
6/10/19	13:48	187	27	25	none	10.50	0.06	-0.03	1.050	1.010	1.130	1.070
6/10/19	13:48	187	28	13	none	10.30	0.03	0.08	0.509	0.560	0.521	0.530

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/10/19	14:15	188	2	13	max	10.02	-0.01	0.04	0.730	0.584	0.605	0.643
6/10/19	14:15	188	3	1	max	10.00	0.09	0.19	0.974	1.070	0.646	0.913
6/10/19	14:15	188	4	2	max	10.10	-0.02	-0.09	0.943	0.690	0.640	0.769
6/10/19	14:15	188	5	3	max	10.02	0.02	0.14	0.677	0.752	0.522	0.657
6/10/19	14:15	188	6	4	max	10.10	0.02	0.03	0.824	1.000	0.691	0.848
6/10/19	14:15	188	7	5	max	10.30	-0.02	0.13	0.760	0.689	0.560	0.675
6/10/19	14:15	188	8	6	max	10.00	-0.06	0.17	0.757	0.673	0.602	0.680
6/10/19	14:15	188	9	7	max	10.10	-0.01	0.03	0.714	0.522	0.498	0.586
6/10/19	14:15	188	10	8	max	10.10	0.09	0.09	0.820	0.569	0.665	0.692
6/10/19	14:15	188	11	9	max	10.02	0.09	0.00	0.687	0.705	0.628	0.674
6/10/19	14:15	188	12	10	max	10.02	0.03	0.04	0.648	1.010	0.577	0.770
6/10/19	14:15	188	13	11	max	10.10	0.01	0.07	0.850	0.828	0.656	0.783
6/10/19	14:15	188	14	12	max	10.02	-0.04	-0.04	0.854	0.613	0.718	0.735
6/10/19	14:15	188	15	13	max	10.02	0.00	0.05	0.749	0.565	0.584	0.638
6/10/19	14:15	188	16	14	max	10.02	0.02	0.13	0.803	0.569	0.636	0.677
6/10/19	14:15	188	17	15	max	10.30	0.10	0.16	0.786	0.872	0.553	0.749
6/10/19	14:15	188	18	16	max	10.10	0.05	0.15	1.040	0.973	0.601	0.891
6/10/19	14:15	188	19	17	max	10.10	-0.33	0.06	1.120	1.130	0.934	1.070
6/10/19	14:15	188	20	18	max	10.30	0.05	0.08	0.753	0.619	0.586	0.657
6/10/19	14:15	188	21	19	max	10.30	0.08	0.10	0.818	0.643	0.500	0.667
6/10/19	14:15	188	22	20	max	10.30	-0.12	0.10	0.906	0.947	0.707	0.859
6/10/19	14:15	188	23	21	max	10.00	0.08	0.03	0.991	0.797	0.677	0.832
6/10/19	14:15	188	24	22	max	10.02	-0.03	-0.16	1.020	0.754	0.832	0.875
6/10/19	14:15	188	25	23	max	10.02	0.03	0.12	0.862	1.170	0.912	0.990
6/10/19	14:15	188	26	24	max	10.10	-0.08	0.56	0.935	1.220	0.807	1.000
6/10/19	14:15	188	27	25	max	10.40	0.06	-0.18	1.110	1.150	1.120	1.130
6/10/19	14:15	188	28	13	max	10.02	0.02	0.05	0.765	0.551	0.595	0.644
6/11/19	9:12	189	2	13	none	5.18	0.01	0.01	1.050	0.728	0.754	0.857

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/11/19	9:12	189	3	13	none	10.10	-0.01	0.07	0.511	0.573	0.531	0.539
6/11/19	9:12	189	4	13	none	20.00	0.03	0.06	0.443	0.580	0.460	0.498
6/11/19	9:12	189	5	13	none	30.00	0.06	0.08	0.386	0.473	0.424	0.429
6/11/19	9:12	189	6	13	none	40.00	0.12	0.01	0.339	0.410	0.367	0.373
6/11/19	9:12	189	7	13	none	50.00	0.02	-0.06	0.312	0.402	0.315	0.345
6/11/19	9:12	189	8	13	12.5%	5.15	0.01	0.00	1.120	0.783	0.830	0.924
6/11/19	9:12	189	9	13	12.5%	10.10	-0.01	0.07	0.513	0.581	0.547	0.548
6/11/19	9:12	189	10	13	12.5%	20.00	0.03	0.06	0.440	0.584	0.470	0.502
6/11/19	9:12	189	11	13	12.5%	30.00	0.05	0.08	0.388	0.479	0.426	0.433
6/11/19	9:12	189	12	13	12.5%	40.00	0.13	-0.01	0.342	0.414	0.364	0.374
6/11/19	9:12	189	13	13	12.5%	50.00	0.02	-0.07	0.307	0.397	0.314	0.342
6/11/19	9:12	189	14	13	25%	5.18	0.00	-0.01	1.160	0.802	0.815	0.938
6/11/19	9:12	189	15	13	25%	10.10	-0.03	0.06	0.519	0.592	0.531	0.548
6/11/19	9:12	189	16	13	25%	20.00	0.02	0.04	0.453	0.588	0.492	0.514
6/11/19	9:12	189	17	13	25%	30.00	0.03	0.07	0.394	0.493	0.431	0.441
6/11/19	9:12	189	18	13	25%	40.00	0.10	-0.01	0.350	0.432	0.377	0.388
6/11/19	9:12	189	19	13	25%	50.00	0.19	-0.08	0.318	0.429	0.327	0.362
6/11/19	9:12	189	20	13	37.5%	5.16	0.00	-0.02	1.180	0.795	0.876	0.965
6/11/19	9:12	189	21	13	37.5%	10.10	-0.05	0.05	0.498	0.581	0.517	0.533
6/11/19	9:12	189	22	13	37.5%	20.00	0.01	0.05	0.448	0.574	0.498	0.509
6/11/19	9:12	189	23	13	37.5%	30.00	0.02	0.06	0.397	0.493	0.428	0.441
6/11/19	9:12	189	24	13	37.5%	40.00	0.11	-0.02	0.354	0.438	0.380	0.392
6/11/19	9:12	189	25	13	37.5%	50.00	0.19	-0.09	0.331	0.424	0.334	0.366
6/11/19	9:12	189	26	13	50%	5.17	0.00	-0.03	1.180	0.759	0.830	0.943
6/11/19	9:12	189	27	13	50%	10.10	-0.05	0.05	0.558	0.580	0.539	0.559
6/11/19	9:12	189	28	13	50%	20.00	0.00	0.05	0.459	0.590	0.501	0.520
6/11/19	9:12	189	29	13	50%	30.00	0.01	0.07	0.397	0.499	0.430	0.444
6/11/19	9:12	189	30	13	50%	40.00	0.09	-0.01	0.359	0.443	0.386	0.397
6/11/19	9:12	189	31	13	50%	50.00	0.19	-0.08	0.331	0.430	0.331	0.367

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/11/19	9:12	189	32	13	62.5%	5.16	0.00	-0.03	1.280	0.773	0.850	0.995
6/11/19	9:12	189	33	13	62.5%	10.10	-0.05	0.04	0.568	0.578	0.554	0.567
6/11/19	9:12	189	34	13	62.5%	20.00	-0.01	0.04	0.467	0.582	0.505	0.520
6/11/19	9:12	189	35	13	62.5%	30.00	0.01	0.06	0.405	0.499	0.437	0.449
6/11/19	9:12	189	36	13	62.5%	40.00	0.09	-0.01	0.361	0.447	0.386	0.400
6/11/19	9:12	189	37	13	62.5%	50.00	0.02	-0.08	0.331	0.435	0.336	0.371
6/11/19	9:12	189	38	13	75%	5.21	-0.01	-0.04	1.460	0.826	0.879	1.090
6/11/19	9:12	189	39	13	75%	10.10	-0.04	0.04	0.660	0.591	0.577	0.610
6/11/19	9:12	189	40	13	75%	20.00	-0.01	0.04	0.483	0.581	0.512	0.527
6/11/19	9:12	189	41	13	75%	30.00	0.01	0.05	0.409	0.495	0.434	0.448
6/11/19	9:12	189	42	13	75%	40.00	0.09	-0.02	0.359	0.448	0.383	0.398
6/11/19	9:12	189	43	13	75%	50.00	0.18	-0.08	0.329	0.437	0.338	0.371
6/11/19	9:12	189	44	13	87.5%	5.13	-0.01	-0.05	1.680	0.906	0.949	1.230
6/11/19	9:12	189	45	13	87.5%	10.10	-0.04	0.03	0.661	0.593	0.589	0.615
6/11/19	9:12	189	46	13	87.5%	20.00	-0.02	0.03	0.489	0.583	0.521	0.532
6/11/19	9:12	189	47	13	87.5%	30.00	0.01	0.05	0.412	0.497	0.439	0.451
6/11/19	9:12	189	48	13	87.5%	40.10	0.08	-0.02	0.362	0.449	0.390	0.402
6/11/19	9:12	189	49	13	87.5%	50.00	0.18	-0.09	0.331	0.438	0.341	0.373
6/11/19	9:12	189	50	13	max	5.08	-0.01	-0.06	1.890	1.020	1.050	1.380
6/11/19	9:12	189	51	13	max	10.00	-0.03	0.02	0.760	0.602	0.601	0.658
6/11/19	9:12	189	52	13	max	20.10	-0.02	0.02	0.483	0.564	0.509	0.520
6/11/19	9:12	189	53	13	max	30.00	0.01	0.05	0.421	0.499	0.443	0.456
6/11/19	9:12	189	54	13	max	40.00	0.09	-0.03	0.364	0.452	0.394	0.405
6/11/19	9:12	189	55	13	max	50.00	0.18	-0.10	0.336	0.441	0.344	0.377
6/12/19	9:54	194	2	13	none	5.03	0.01	0.02	1.090	0.763	0.755	0.882
6/12/19	9:54	194	3	13	none	10.10	-0.02	0.09	0.503	0.584	0.529	0.540
6/12/19	9:54	194	4	13	none	20.00	0.04	0.06	0.443	0.593	0.462	0.504
6/12/19	9:54	194	5	13	none	30.00	0.03	0.10	0.386	0.478	0.423	0.431

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/12/19	9:54	194	6	13	none	40.00	0.11	0.02	0.343	0.411	0.371	0.376
6/12/19	9:54	194	7	13	none	50.00	0.02	-0.06	0.312	0.394	0.318	0.344
6/12/19	9:54	194	8	13	12.5%	5.05	0.01	0.02	1.110	0.761	0.779	0.900
6/12/19	9:54	194	9	13	12.5%	10.00	-0.03	0.08	0.503	0.586	0.523	0.539
6/12/19	9:54	194	10	13	12.5%	20.00	0.03	0.06	0.453	0.588	0.500	0.517
6/12/19	9:54	194	11	13	12.5%	30.00	0.01	0.09	0.386	0.487	0.416	0.432
6/12/19	9:54	194	12	13	12.5%	40.00	0.08	0.02	0.347	0.443	0.376	0.391
6/12/19	9:54	194	13	13	12.5%	50.00	0.02	-0.07	0.316	0.410	0.323	0.353
6/12/19	9:54	194	14	13	25%	5.07	0.01	0.01	1.130	0.778	0.796	0.918
6/12/19	9:54	194	15	13	25%	10.00	-0.04	0.07	0.493	0.577	0.507	0.527
6/12/19	9:54	194	16	13	25%	20.00	0.02	0.06	0.452	0.582	0.488	0.510
6/12/19	9:54	194	17	13	25%	30.00	0.01	0.09	0.387	0.494	0.423	0.437
6/12/19	9:54	194	18	13	25%	40.00	0.11	-0.01	0.348	0.428	0.379	0.387
6/12/19	9:54	194	19	13	25%	50.00	0.02	-0.08	0.317	0.414	0.327	0.355
6/12/19	9:54	194	20	13	37.5%	5.06	0.00	0.01	1.220	0.795	0.806	0.961
6/12/19	9:54	194	21	13	37.5%	10.10	-0.04	0.07	0.508	0.587	0.509	0.536
6/12/19	9:54	194	22	13	37.5%	20.00	0.01	0.06	0.451	0.576	0.499	0.511
6/12/19	9:54	194	23	13	37.5%	30.00	0.02	0.09	0.392	0.495	0.426	0.440
6/12/19	9:54	194	24	13	37.5%	40.00	0.12	-0.01	0.352	0.434	0.383	0.391
6/12/19	9:54	194	25	13	37.5%	50.00	0.02	-0.07	0.324	0.422	0.333	0.362
6/12/19	9:54	194	26	13	50%	5.04	0.00	0.00	1.350	0.808	0.832	1.030
6/12/19	9:54	194	27	13	50%	10.00	-0.04	0.06	0.563	0.591	0.540	0.565
6/12/19	9:54	194	28	13	50%	20.00	0.00	0.05	0.447	0.572	0.503	0.510
6/12/19	9:54	194	29	13	50%	30.00	0.03	0.08	0.400	0.503	0.440	0.450
6/12/19	9:54	194	30	13	50%	40.00	0.11	0.01	0.358	0.451	0.386	0.400
6/12/19	9:54	194	31	13	50%	50.00	0.02	-0.07	0.321	0.434	0.338	0.368
6/12/19	9:54	194	32	13	62.5%	5.04	0.00	-0.01	1.440	0.781	0.811	1.050
6/12/19	9:54	194	33	13	62.5%	10.10	-0.04	0.06	0.552	0.571	0.534	0.552
6/12/19	9:54	194	34	13	62.5%	20.00	0.00	0.05	0.466	0.587	0.509	0.523

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/12/19	9:54	194	35	13	62.5%	30.00	0.02	0.07	0.399	0.501	0.435	0.447
6/12/19	9:54	194	36	13	62.5%	40.00	0.10	0.00	0.358	0.454	0.389	0.402
6/12/19	9:54	194	37	13	62.5%	50.00	0.02	-0.08	0.330	0.438	0.340	0.372
6/12/19	9:54	194	38	13	75%	5.06	0.00	-0.01	1.730	0.804	0.822	1.200
6/12/19	9:54	194	39	13	75%	10.00	-0.03	0.05	0.616	0.575	0.574	0.588
6/12/19	9:54	194	40	13	75%	20.00	-0.02	0.05	0.465	0.572	0.509	0.517
6/12/19	9:54	194	41	13	75%	30.00	0.02	0.06	0.406	0.494	0.437	0.447
6/12/19	9:54	194	42	13	75%	40.00	0.13	0.03	0.362	0.457	0.391	0.405
6/12/19	9:54	194	43	13	75%	50.00	0.03	-0.04	0.325	0.440	0.342	0.373
6/12/19	9:54	194	44	13	87.5%	5.08	0.00	-0.02	1.960	0.833	0.879	1.330
6/12/19	9:54	194	45	13	87.5%	10.00	-0.02	0.04	0.700	0.581	0.594	0.627
6/12/19	9:54	194	46	13	87.5%	20.00	-0.02	0.04	0.482	0.564	0.521	0.524
6/12/19	9:54	194	47	13	87.5%	30.00	0.02	0.07	0.408	0.497	0.436	0.449
6/12/19	9:54	194	48	13	87.5%	40.00	0.10	-0.01	0.360	0.454	0.392	0.404
6/12/19	9:54	194	49	13	87.5%	50.00	0.19	-0.07	0.333	0.445	0.346	0.378
6/12/19	9:54	194	50	13	max	5.02	0.00	-0.03	2.340	0.974	0.966	1.570
6/12/19	9:54	194	51	13	max	10.10	-0.02	0.03	0.696	0.589	0.616	0.635
6/12/19	9:54	194	52	13	max	20.00	-0.01	0.04	0.489	0.572	0.516	0.527
6/12/19	9:54	194	53	13	max	30.00	0.02	0.05	0.409	0.494	0.439	0.449
6/12/19	9:54	194	54	13	max	40.00	0.10	-0.02	0.362	0.452	0.396	0.405
6/12/19	9:54	194	55	13	max	50.00	0.19	-0.07	0.337	0.449	0.351	0.382
6/13/19	10:04	195	2	13	none	25.70	0.03	0.05	0.410	0.505	0.446	0.455
6/13/19	10:04	195	3	1	none	25.30	0.42	0.39	0.651	0.905	0.474	0.700
6/13/19	10:04	195	4	2	none	25.50	0.02	-0.03	0.321	0.353	0.455	0.381
6/13/19	10:04	195	5	3	none	25.60	0.69	0.03	0.327	0.474	0.374	0.397
6/13/19	10:04	195	6	4	none	25.80	0.68	0.53	0.412	0.518	0.472	0.469
6/13/19	10:04	195	7	5	none	26.00	0.14	0.14	0.431	0.498	0.464	0.465
6/13/19	10:04	195	8	6	none	25.40	0.02	0.02	0.355	0.384	0.435	0.393

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	10:04	195	9	7	none	25.60	0.06	-0.06	0.354	0.489	0.400	0.418
6/13/19	10:04	195	10	8	none	25.70	0.47	0.15	0.321	0.441	0.361	0.378
6/13/19	10:04	195	11	9	none	25.90	0.02	-0.01	0.422	0.511	0.471	0.469
6/13/19	10:04	195	12	10	none	25.90	0.74	-0.19	0.373	0.418	0.509	0.437
6/13/19	10:04	195	13	11	none	25.40	0.07	0.09	0.452	0.619	0.480	0.522
6/13/19	10:04	195	14	12	none	25.60	0.05	-0.02	0.409	0.450	0.493	0.452
6/13/19	10:04	195	15	13	none	25.70	0.08	0.06	0.407	0.511	0.451	0.458
6/13/19	10:04	195	16	14	none	25.90	0.02	0.02	0.404	0.463	0.445	0.438
6/13/19	10:04	195	17	15	none	26.10	0.03	0.16	0.442	0.650	0.452	0.523
6/13/19	10:04	195	18	16	none	25.40	0.14	0.03	0.408	0.562	0.402	0.463
6/13/19	10:04	195	19	17	none	25.60	-0.03	0.18	0.380	0.422	0.455	0.420
6/13/19	10:04	195	20	18	none	25.80	0.15	0.07	0.377	0.518	0.403	0.437
6/13/19	10:04	195	21	19	none	25.80	0.17	0.15	0.363	0.428	0.429	0.408
6/13/19	10:04	195	22	20	none	26.00	-0.02	-0.03	0.335	0.478	0.377	0.401
6/13/19	10:04	195	23	21	none	25.50	0.02	0.32	0.396	0.573	0.484	0.489
6/13/19	10:04	195	24	22	none	25.60	0.14	-0.36	0.375	0.544	0.464	0.466
6/13/19	10:04	195	25	23	none	25.70	0.04	0.03	0.344	0.398	0.420	0.389
6/13/19	10:04	195	26	24	none	25.80	-0.03	0.73	0.359	0.387	0.465	0.406
6/13/19	10:04	195	27	25	none	26.10	0.08	-0.35	0.416	0.520	0.452	0.465
6/13/19	10:04	195	28	13	none	25.70	0.11	0.09	0.410	0.525	0.454	0.466
6/13/19	10:30	196	2	13	max	25.70	0.03	0.02	0.455	0.519	0.500	0.492
6/13/19	10:30	196	3	1	max	25.30	0.02	0.03	0.475	0.745	0.438	0.569
6/13/19	10:30	196	4	2	max	25.40	0.02	-0.03	0.377	0.361	0.494	0.415
6/13/19	10:30	196	5	3	max	25.60	0.73	0.05	0.384	0.547	0.407	0.452
6/13/19	10:30	196	6	4	max	25.80	0.71	0.48	0.403	0.559	0.447	0.474
6/13/19	10:30	196	7	5	max	25.90	0.18	0.12	0.441	0.525	0.480	0.483
6/13/19	10:30	196	8	6	max	25.40	0.02	0.02	0.387	0.484	0.456	0.444
6/13/19	10:30	196	9	7	max	25.60	0.10	-0.04	0.376	0.472	0.408	0.421

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	10:30	196	10	8	max	25.60	0.52	0.18	0.366	0.495	0.402	0.425
6/13/19	10:30	196	11	9	max	25.80	0.03	-0.02	0.421	0.539	0.469	0.479
6/13/19	10:30	196	12	10	max	25.90	0.64	-0.19	0.364	0.499	0.455	0.443
6/13/19	10:30	196	13	11	max	25.40	0.11	0.08	0.482	0.679	0.481	0.555
6/13/19	10:30	196	14	12	max	25.50	0.07	-0.03	0.455	0.458	0.535	0.484
6/13/19	10:30	196	15	13	max	25.70	0.05	0.03	0.453	0.520	0.490	0.488
6/13/19	10:30	196	16	14	max	25.80	0.02	0.06	0.416	0.484	0.469	0.457
6/13/19	10:30	196	17	15	max	26.10	0.02	0.11	0.450	0.668	0.438	0.529
6/13/19	10:30	196	18	16	max	25.40	0.12	0.02	0.403	0.610	0.398	0.481
6/13/19	10:30	196	19	17	max	25.50	-0.31	0.12	0.406	0.572	0.442	0.479
6/13/19	10:30	196	20	18	max	25.70	0.10	0.01	0.381	0.488	0.415	0.430
6/13/19	10:30	196	21	19	max	25.80	0.16	0.16	0.390	0.464	0.424	0.427
6/13/19	10:30	196	22	20	max	25.90	-0.04	-0.02	0.377	0.505	0.414	0.436
6/13/19	10:30	196	23	21	max	25.40	0.02	0.31	0.433	0.516	0.498	0.484
6/13/19	10:30	196	24	22	max	25.60	0.17	-0.32	0.430	0.572	0.515	0.509
6/13/19	10:30	196	25	23	max	25.70	-0.02	0.30	0.376	0.462	0.414	0.419
6/13/19	10:30	196	26	24	max	25.80	-0.05	0.81	0.387	0.480	0.473	0.449
6/13/19	10:30	196	27	25	max	26.10	0.18	-0.03	0.483	0.676	0.483	0.555
6/13/19	10:30	196	28	13	max	25.70	0.12	0.06	0.451	0.540	0.488	0.494
6/13/19	10:55	197	2	13	none	51.40	0.39	-0.09	0.316	0.401	0.316	0.347
6/13/19	10:55	197	3	1	none	50.40	0.65	0.45	0.576	0.936	0.475	0.692
6/13/19	10:55	197	4	2	none	50.80	0.77	-0.03	0.323	0.445	0.358	0.379
6/13/19	10:55	197	5	3	none	51.10	1.73	-0.11	0.388	0.411	0.489	0.431
6/13/19	10:55	197	6	4	none	51.40	1.68	0.47	0.308	0.386	0.350	0.349
6/13/19	10:55	197	7	5	none	51.80	1.02	-0.02	0.406	0.397	0.469	0.425
6/13/19	10:55	197	8	6	none	50.60	0.30	0.02	0.350	0.406	0.384	0.381
6/13/19	10:55	197	9	7	none	51.00	0.41	-0.03	0.028	0.342	0.306	0.311
6/13/19	10:55	197	10	8	none	51.30	0.91	0.10	0.029	0.406	0.305	0.338

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	10:55	197	11	9	none	51.50	1.21	-0.03	0.315	0.391	0.322	0.345
6/13/19	10:55	197	12	10	none	51.90	0.93	-0.31	0.027	0.381	0.027	0.312
6/13/19	10:55	197	13	11	none	50.50	0.38	0.03	0.334	0.421	0.357	0.372
6/13/19	10:55	197	14	12	none	51.10	0.34	-0.10	0.302	0.400	0.305	0.339
6/13/19	10:55	197	15	13	none	51.40	0.50	-0.08	0.312	0.408	0.320	0.349
6/13/19	10:55	197	16	14	none	51.60	0.52	-0.42	0.331	0.434	0.363	0.378
6/13/19	10:55	197	17	15	none	52.10	0.60	-0.08	0.339	0.485	0.325	0.390
6/13/19	10:55	197	18	16	none	50.70	0.41	0.47	0.373	0.511	0.370	0.423
6/13/19	10:55	197	19	17	none	51.00	-0.04	0.07	0.314	0.378	0.378	0.358
6/13/19	10:55	197	20	18	none	51.40	0.18	-0.07	0.027	0.350	0.026	0.030
6/13/19	10:55	197	21	19	none	51.60	0.03	0.07	0.027	0.330	0.026	0.029
6/13/19	10:55	197	22	20	none	52.00	0.47	0.02	0.029	0.344	0.301	0.311
6/13/19	10:55	197	23	21	none	50.70	0.62	0.43	0.356	0.593	0.334	0.443
6/13/19	10:55	197	24	22	none	51.00	0.03	-0.55	0.029	0.409	0.314	0.340
6/13/19	10:55	197	25	23	none	51.30	0.17	0.18	0.330	0.404	0.364	0.367
6/13/19	10:55	197	26	24	none	51.60	0.02	1.06	0.326	0.414	0.332	0.360
6/13/19	10:55	197	27	25	none	52.00	0.44	-0.42	0.448	0.576	0.532	0.521
6/13/19	10:55	197	28	13	none	51.40	0.58	-0.06	0.310	0.417	0.321	0.352
6/13/19	11:23	198	2	13	max	51.40	0.35	-0.08	0.337	0.446	0.348	0.380
6/13/19	11:23	198	3	1	max	50.40	0.58	0.40	0.544	0.906	0.505	0.677
6/13/19	11:23	198	4	2	max	50.80	0.70	-0.03	0.329	0.442	0.368	0.382
6/13/19	11:23	198	5	3	max	51.10	1.62	-0.13	0.381	0.439	0.474	0.433
6/13/19	11:23	198	6	4	max	51.30	1.58	0.49	0.304	0.376	0.373	0.352
6/13/19	11:23	198	7	5	max	51.80	0.84	-0.18	0.413	0.422	0.493	0.444
6/13/19	11:23	198	8	6	max	50.50	0.32	0.02	0.363	0.460	0.400	0.410
6/13/19	11:23	198	9	7	max	51.00	0.38	-0.03	0.028	0.332	0.300	0.305
6/13/19	11:23	198	10	8	max	51.30	1.12	0.11	0.028	0.435	0.301	0.345
6/13/19	11:23	198	11	9	max	51.50	1.16	-0.03	0.304	0.413	0.326	0.351

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	11:23	198	12	10	max	51.90	0.80	-0.03	0.028	0.371	0.304	0.322
6/13/19	11:23	198	13	11	max	50.60	0.32	0.02	0.349	0.482	0.370	0.404
6/13/19	11:23	198	14	12	max	51.10	0.38	-0.14	0.318	0.411	0.325	0.354
6/13/19	11:23	198	15	13	max	51.40	0.44	-0.09	0.330	0.445	0.347	0.377
6/13/19	11:23	198	16	14	max	51.60	0.53	-0.43	0.345	0.448	0.376	0.392
6/13/19	11:23	198	17	15	max	52.10	0.58	-0.10	0.340	0.486	0.336	0.393
6/13/19	11:23	198	18	16	max	50.70	0.33	0.46	0.342	0.508	0.352	0.408
6/13/19	11:23	198	19	17	max	51.00	-0.12	0.06	0.323	0.427	0.395	0.384
6/13/19	11:23	198	20	18	max	51.40	0.02	-0.10	0.027	0.363	0.027	0.304
6/13/19	11:23	198	21	19	max	51.60	0.02	0.00	0.028	0.346	0.029	0.305
6/13/19	11:23	198	22	20	max	52.00	0.42	-0.02	0.302	0.379	0.348	0.345
6/13/19	11:23	198	23	21	max	50.70	0.58	0.44	0.340	0.570	0.342	0.431
6/13/19	11:23	198	24	22	max	51.00	0.03	-0.60	0.301	0.428	0.330	0.357
6/13/19	11:23	198	25	23	max	51.30	0.11	0.18	0.337	0.425	0.391	0.386
6/13/19	11:23	198	26	24	max	51.60	0.15	1.06	0.339	0.429	0.353	0.376
6/13/19	11:23	198	27	25	max	51.90	0.53	-0.42	0.478	0.598	0.586	0.557
6/13/19	11:23	198	28	13	max	51.40	0.54	-0.07	0.328	0.447	0.354	0.380
6/13/19	11:53	200	2	13	max	25.70	0.04	0.01	0.452	0.523	0.485	0.488
6/13/19	11:53	200	3	1	max	25.30	0.03	0.02	0.478	0.734	0.445	0.567
6/13/19	11:53	200	4	2	max	25.40	0.02	-0.03	0.357	0.357	0.480	0.402
6/13/19	11:53	200	5	3	max	25.60	0.74	0.04	0.382	0.544	0.397	0.447
6/13/19	11:53	200	6	4	max	25.70	0.71	0.46	0.405	0.568	0.442	0.477
6/13/19	11:53	200	7	5	max	25.90	0.02	0.10	0.444	0.518	0.474	0.480
6/13/19	11:53	200	8	6	max	25.30	0.02	0.19	0.373	0.495	0.438	0.438
6/13/19	11:53	200	9	7	max	25.50	0.09	-0.07	0.370	0.459	0.404	0.413
6/13/19	11:53	200	10	8	max	25.60	0.51	0.14	0.365	0.478	0.408	0.419
6/13/19	11:53	200	11	9	max	25.80	0.03	-0.05	0.429	0.541	0.470	0.482
6/13/19	11:53	200	12	10	max	25.90	0.62	-0.02	0.355	0.485	0.448	0.433

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	11:53	200	13	11	max	25.40	0.11	0.07	0.473	0.644	0.470	0.535
6/13/19	11:53	200	14	12	max	25.50	0.06	-0.03	0.458	0.457	0.543	0.488
6/13/19	11:53	200	15	13	max	25.70	0.08	0.03	0.448	0.535	0.486	0.491
6/13/19	11:53	200	16	14	max	25.80	0.02	-0.01	0.411	0.486	0.453	0.451
6/13/19	11:53	200	17	15	max	26.00	0.02	0.07	0.445	0.663	0.431	0.524
6/13/19	11:53	200	18	16	max	25.40	0.08	0.02	0.404	0.607	0.400	0.480
6/13/19	11:53	200	19	17	max	25.50	-0.30	0.09	0.411	0.584	0.441	0.485
6/13/19	11:53	200	20	18	max	25.70	0.10	-0.02	0.379	0.490	0.413	0.430
6/13/19	11:53	200	21	19	max	25.80	0.17	0.14	0.380	0.470	0.424	0.426
6/13/19	11:53	200	22	20	max	25.90	-0.04	-0.04	0.367	0.502	0.415	0.432
6/13/19	11:53	200	23	21	max	25.40	0.02	0.31	0.419	0.510	0.490	0.475
6/13/19	11:53	200	24	22	max	25.50	0.19	-0.36	0.426	0.557	0.520	0.504
6/13/19	11:53	200	25	23	max	25.60	-0.01	0.03	0.375	0.461	0.406	0.415
6/13/19	11:53	200	26	24	max	25.80	-0.05	0.81	0.390	0.479	0.460	0.445
6/13/19	11:53	200	27	25	max	26.10	0.15	-0.30	0.458	0.646	0.476	0.533
6/13/19	11:53	200	28	13	max	25.70	0.10	0.03	0.443	0.525	0.491	0.487
6/13/19	12:21	201	2	13	max	5.03	0.01	-0.01	2.100	1.020	1.020	1.470
6/13/19	12:21	201	3	1	max	4.98	0.09	0.07	3.110	1.990	1.740	2.360
6/13/19	12:21	201	4	2	max	4.96	-0.02	-0.04	2.420	0.996	1.150	1.650
6/13/19	12:21	201	5	3	max	4.95	0.09	0.08	2.240	1.710	1.070	1.740
6/13/19	12:21	201	6	4	max	4.93	0.09	0.13	2.130	1.610	1.350	1.730
6/13/19	12:21	201	7	5	max	5.00	0.06	0.08	2.030	1.860	1.170	1.730
6/13/19	12:21	201	8	6	max	4.81	-0.03	0.07	2.810	1.010	1.060	1.830
6/13/19	12:21	201	9	7	max	4.90	0.00	0.02	2.100	0.925	0.837	1.410
6/13/19	12:21	201	10	8	max	4.91	0.04	0.04	2.050	1.080	1.370	1.560
6/13/19	12:21	201	11	9	max	4.90	0.08	0.01	2.150	1.660	1.220	1.720
6/13/19	12:21	201	12	10	max	4.89	0.11	0.03	2.050	1.490	1.190	1.610
6/13/19	12:21	201	13	11	max	4.97	0.01	0.04	2.230	1.320	1.010	1.610

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	12:21	201	14	12	max	5.00	-0.01	-0.01	2.320	1.120	1.140	1.620
6/13/19	12:21	201	15	13	max	5.00	0.01	-0.01	2.020	1.020	0.973	1.420
6/13/19	12:21	201	16	14	max	4.94	0.02	0.02	2.040	0.955	1.010	1.430
6/13/19	12:21	201	17	15	max	4.94	0.04	0.07	2.390	1.520	1.020	1.740
6/13/19	12:21	201	18	16	max	4.96	0.05	0.07	2.440	1.560	0.949	1.760
6/13/19	12:21	201	19	17	max	5.02	-0.12	0.06	2.800	2.330	1.520	2.280
6/13/19	12:21	201	20	18	max	4.99	0.00	0.04	2.500	1.480	1.310	1.840
6/13/19	12:21	201	21	19	max	4.99	0.03	0.03	2.800	1.200	1.020	1.850
6/13/19	12:21	201	22	20	max	5.08	-0.02	0.06	2.290	2.150	1.170	1.930
6/13/19	12:21	201	23	21	max	5.02	0.04	0.11	2.580	1.730	1.080	1.900
6/13/19	12:21	201	24	22	max	5.07	-0.02	-0.07	2.740	1.320	1.490	1.950
6/13/19	12:21	201	25	23	max	5.07	-0.04	0.08	2.450	2.070	1.440	2.030
6/13/19	12:21	201	26	24	max	5.07	-0.07	0.02	2.680	2.200	2.090	2.340
6/13/19	12:21	201	27	25	max	5.14	0.02	-0.04	3.210	2.780	2.050	2.720
6/13/19	12:21	201	28	13	max	4.98	0.02	-0.02	1.990	1.020	0.939	1.400
6/13/19	12:51	202	2	13	max	5.07	0.02	0.02	1.490	0.759	0.773	1.060
6/13/19	12:51	202	3	1	max	4.99	0.07	0.10	2.070	1.380	0.971	1.540
6/13/19	12:51	202	4	2	max	5.04	0.00	-0.03	1.490	0.778	0.901	1.100
6/13/19	12:51	202	5	3	max	5.06	0.15	0.09	1.510	1.430	0.893	1.300
6/13/19	12:51	202	6	4	max	5.06	0.12	0.13	1.490	1.340	0.951	1.280
6/13/19	12:51	202	7	5	max	5.11	0.02	0.06	1.410	1.070	0.800	1.120
6/13/19	12:51	202	8	6	max	4.95	-0.03	0.09	1.480	0.789	0.845	1.080
6/13/19	12:51	202	9	7	max	4.97	0.01	0.02	1.420	0.625	0.732	0.988
6/13/19	12:51	202	10	8	max	4.97	0.07	0.05	1.590	0.772	0.965	1.160
6/13/19	12:51	202	11	9	max	5.02	0.05	-0.01	1.460	0.931	0.826	1.110
6/13/19	12:51	202	12	10	max	5.07	0.14	0.02	1.570	1.060	0.909	1.210
6/13/19	12:51	202	13	11	max	5.03	0.00	0.05	1.510	1.060	0.854	1.180
6/13/19	12:51	202	14	12	max	5.01	-0.01	-0.01	1.520	0.774	0.960	1.130

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	12:51	202	15	13	max	5.06	0.01	0.01	1.480	0.766	0.781	1.060
6/13/19	12:51	202	16	14	max	5.07	0.03	0.05	1.610	0.827	0.901	1.170
6/13/19	12:51	202	17	15	max	5.10	0.02	0.08	1.630	1.220	0.854	1.270
6/13/19	12:51	202	18	16	max	5.10	0.04	0.08	1.960	1.350	0.834	1.460
6/13/19	12:51	202	19	17	max	5.11	-0.16	0.05	1.910	1.500	1.200	1.570
6/13/19	12:51	202	20	18	max	5.11	0.03	0.05	1.650	0.904	0.944	1.210
6/13/19	12:51	202	21	19	max	5.09	0.04	0.05	1.530	0.849	0.778	1.110
6/13/19	12:51	202	22	20	max	5.08	-0.05	0.03	1.740	1.330	1.030	1.400
6/13/19	12:51	202	23	21	max	5.06	0.05	0.12	1.800	1.270	0.931	1.380
6/13/19	12:51	202	24	22	max	5.10	-0.02	-0.10	2.030	1.120	1.180	1.500
6/13/19	12:51	202	25	23	max	5.04	0.00	0.04	1.460	1.420	1.150	1.350
6/13/19	12:51	202	26	24	max	5.13	-0.07	0.03	2.030	2.040	1.600	1.900
6/13/19	12:51	202	27	25	max	5.20	0.03	-0.09	1.980	1.710	1.440	1.720
6/13/19	12:51	202	28	13	max	5.10	0.02	0.02	1.480	0.754	0.793	1.060
6/13/19	13:25	203	2	13	max	10.30	0.00	0.06	0.768	0.586	0.623	0.663
6/13/19	13:25	203	3	1	max	10.10	0.06	0.17	0.983	0.919	0.568	0.843
6/13/19	13:25	203	4	2	max	10.10	0.01	-0.11	1.160	0.651	0.632	0.849
6/13/19	13:25	203	5	3	max	10.02	0.03	0.15	0.694	0.778	0.538	0.677
6/13/19	13:25	203	6	4	max	10.02	0.02	0.03	0.735	0.877	0.646	0.759
6/13/19	13:25	203	7	5	max	10.40	0.03	0.12	0.716	0.660	0.560	0.648
6/13/19	13:25	203	8	6	max	10.00	-0.06	0.15	0.914	0.673	0.644	0.753
6/13/19	13:25	203	9	7	max	10.02	0.01	0.05	0.749	0.501	0.472	0.587
6/13/19	13:25	203	10	8	max	10.02	0.12	0.13	0.796	0.582	0.661	0.685
6/13/19	13:25	203	11	9	max	10.30	0.12	0.02	0.672	0.718	0.648	0.680
6/13/19	13:25	203	12	10	max	10.30	0.03	0.04	0.644	1.040	0.612	0.788
6/13/19	13:25	203	13	11	max	10.02	0.00	0.07	0.833	0.790	0.612	0.751
6/13/19	13:25	203	14	12	max	10.30	-0.03	-0.02	0.699	0.608	0.678	0.663
6/13/19	13:25	203	15	13	max	10.30	0.00	0.06	0.668	0.565	0.585	0.607

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	13:25	203	16	14	max	10.30	0.03	0.13	0.722	0.572	0.630	0.644
6/13/19	13:25	203	17	15	max	10.30	0.08	0.15	0.833	0.941	0.554	0.793
6/13/19	13:25	203	18	16	max	10.02	0.03	0.15	0.940	0.973	0.604	0.855
6/13/19	13:25	203	19	17	max	10.02	-0.34	0.06	1.060	1.120	0.860	1.020
6/13/19	13:25	203	20	18	max	10.30	0.07	0.09	0.815	0.587	0.628	0.684
6/13/19	13:25	203	21	19	max	10.30	0.09	0.12	0.766	0.647	0.491	0.645
6/13/19	13:25	203	22	20	max	10.40	-0.17	0.10	0.948	0.983	0.677	0.880
6/13/19	13:25	203	23	21	max	10.10	0.08	0.02	1.030	0.836	0.682	0.861
6/13/19	13:25	203	24	22	max	10.02	-0.04	-0.19	1.360	0.792	0.864	1.040
6/13/19	13:25	203	25	23	max	10.02	0.00	0.13	0.972	1.100	0.930	1.000
6/13/19	13:25	203	26	24	max	10.02	-0.13	0.54	1.140	1.360	0.895	1.150
6/13/19	13:25	203	27	25	max	10.50	0.03	-0.13	1.110	1.090	1.090	1.100
6/13/19	13:25	203	28	13	max	10.30	0.01	0.08	0.743	0.565	0.591	0.638
6/13/19	13:53	204	2	13	max	25.70	0.03	0.01	0.467	0.520	0.492	0.494
6/13/19	13:53	204	3	1	max	25.30	0.02	0.03	0.456	0.720	0.424	0.549
6/13/19	13:53	204	4	2	max	25.40	0.02	-0.02	0.365	0.357	0.485	0.406
6/13/19	13:53	204	5	3	max	25.60	0.76	0.05	0.389	0.546	0.390	0.448
6/13/19	13:53	204	6	4	max	25.80	0.71	0.46	0.405	0.581	0.441	0.482
6/13/19	13:53	204	7	5	max	25.90	0.10	0.14	0.470	0.540	0.487	0.500
6/13/19	13:53	204	8	6	max	25.30	0.02	0.02	0.400	0.502	0.450	0.453
6/13/19	13:53	204	9	7	max	25.50	0.10	-0.03	0.389	0.480	0.408	0.427
6/13/19	13:53	204	10	8	max	25.60	0.50	0.17	0.368	0.512	0.408	0.434
6/13/19	13:53	204	11	9	max	25.80	0.03	-0.04	0.436	0.535	0.484	0.487
6/13/19	13:53	204	12	10	max	25.90	0.60	-0.02	0.353	0.497	0.438	0.434
6/13/19	13:53	204	13	11	max	25.40	0.10	0.07	0.494	0.694	0.479	0.564
6/13/19	13:53	204	14	12	max	25.50	0.07	-0.02	0.469	0.463	0.544	0.493
6/13/19	13:53	204	15	13	max	25.70	0.06	0.04	0.455	0.529	0.481	0.489
6/13/19	13:53	204	16	14	max	25.80	0.03	0.03	0.420	0.482	0.469	0.458

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	13:53	204	17	15	max	26.10	0.02	0.08	0.443	0.660	0.434	0.523
6/13/19	13:53	204	18	16	max	25.40	0.12	0.02	0.409	0.597	0.390	0.475
6/13/19	13:53	204	19	17	max	25.60	-0.31	0.10	0.410	0.553	0.429	0.468
6/13/19	13:53	204	20	18	max	25.80	0.11	0.00	0.371	0.443	0.405	0.407
6/13/19	13:53	204	21	19	max	25.80	0.17	0.14	0.389	0.456	0.421	0.423
6/13/19	13:53	204	22	20	max	25.90	-0.07	-0.05	0.379	0.504	0.423	0.438
6/13/19	13:53	204	23	21	max	25.40	0.19	0.31	0.421	0.502	0.485	0.471
6/13/19	13:53	204	24	22	max	25.50	0.19	-0.34	0.437	0.552	0.518	0.505
6/13/19	13:53	204	25	23	max	25.70	-0.01	0.03	0.374	0.466	0.416	0.421
6/13/19	13:53	204	26	24	max	25.80	-0.06	0.81	0.394	0.494	0.456	0.450
6/13/19	13:53	204	27	25	max	26.10	0.03	-0.03	0.468	0.683	0.474	0.550
6/13/19	13:53	204	28	13	max	25.70	0.10	0.05	0.445	0.538	0.478	0.488
6/13/19	14:20	205	2	13	max	5.02	0.01	0.00	1.990	1.090	0.979	1.430
6/13/19	14:20	205	3	1	max	4.94	0.08	0.08	2.700	1.970	1.600	2.140
6/13/19	14:20	205	4	2	max	4.96	-0.02	-0.04	2.150	0.927	1.140	1.500
6/13/19	14:20	205	5	3	max	4.97	0.09	0.08	2.040	1.630	1.050	1.630
6/13/19	14:20	205	6	4	max	4.94	0.08	0.14	2.090	1.530	1.390	1.700
6/13/19	14:20	205	7	5	max	5.00	0.05	0.08	2.250	1.780	1.090	1.770
6/13/19	14:20	205	8	6	max	4.90	-0.02	0.08	2.010	0.984	1.010	1.420
6/13/19	14:20	205	9	7	max	4.93	0.00	0.02	2.050	0.970	0.837	1.390
6/13/19	14:20	205	10	8	max	4.94	0.05	0.05	1.970	1.110	1.240	1.490
6/13/19	14:20	205	11	9	max	4.94	0.06	0.01	1.800	1.380	1.070	1.450
6/13/19	14:20	205	12	10	max	4.96	0.07	0.04	2.020	1.610	1.330	1.680
6/13/19	14:20	205	13	11	max	4.99	0.01	0.05	2.220	1.210	0.959	1.560
6/13/19	14:20	205	14	12	max	4.99	-0.02	0.01	2.140	1.170	1.110	1.550
6/13/19	14:20	205	15	13	max	4.99	0.01	0.01	2.180	1.030	1.010	1.510
6/13/19	14:20	205	16	14	max	4.98	0.02	0.02	2.270	1.030	1.080	1.570
6/13/19	14:20	205	17	15	max	5.02	0.01	0.07	2.180	1.560	1.150	1.680

Table B1. Cobra Data Probe (cont.)

Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/13/19	14:20	205	18	16	max	5.03	0.04	0.09	2.330	1.670	0.936	1.740
6/13/19	14:20	205	19	17	max	5.05	-0.12	0.06	2.590	2.240	1.470	2.150
6/13/19	14:20	205	20	18	max	5.08	-0.01	0.05	2.460	1.390	1.230	1.780
6/13/19	14:20	205	21	19	max	5.01	0.03	0.04	2.860	1.080	1.040	1.860
6/13/19	14:20	205	22	20	max	5.05	-0.02	0.06	2.270	2.050	1.190	1.900
6/13/19	14:20	205	23	21	max	5.07	0.06	0.11	2.730	1.670	1.080	1.950
6/13/19	14:20	205	24	22	max	5.12	-0.01	-0.07	2.800	1.360	1.490	1.990
6/13/19	14:20	205	25	23	max	5.08	-0.03	0.08	2.510	1.910	1.450	2.000
6/13/19	14:20	205	26	24	max	5.10	-0.09	0.02	3.290	2.560	2.330	2.760
6/13/19	14:20	205	27	25	max	5.22	0.02	-0.03	3.700	3.000	2.110	3.010
6/13/19	14:20	205	28	13	max	4.99	0.01	0.00	2.390	1.070	1.090	1.640
6/14/19	12:46	206	2	13	none	51.40	0.37	-0.13	0.313	0.396	0.316	0.344
6/14/19	12:46	206	3	1	none	50.40	0.60	0.46	0.608	0.955	0.483	0.711
6/14/19	12:46	206	4	2	none	50.80	0.80	-0.03	0.328	0.457	0.357	0.385
6/14/19	12:46	206	5	3	none	51.20	1.71	-0.19	0.390	0.421	0.470	0.428
6/14/19	12:46	206	6	4	none	51.40	1.72	0.43	0.319	0.394	0.373	0.364
6/14/19	12:46	206	7	5	none	51.80	1.06	-0.30	0.423	0.408	0.486	0.440
6/14/19	12:46	206	8	6	none	50.60	0.35	0.02	0.358	0.429	0.397	0.396
6/14/19	12:46	206	9	7	none	51.00	0.41	-0.03	0.027	0.323	0.030	0.030
6/14/19	12:46	206	10	8	none	51.30	1.01	0.08	0.026	0.364	0.027	0.303
6/14/19	12:46	206	11	9	none	51.50	1.31	-0.03	0.301	0.363	0.317	0.328
6/14/19	12:46	206	12	10	none	51.90	0.96	-0.33	0.027	0.378	0.029	0.317
6/14/19	12:46	206	13	11	none	50.50	0.44	0.03	0.337	0.448	0.354	0.383
6/14/19	12:46	206	14	12	none	51.10	0.35	-0.10	0.304	0.402	0.304	0.340
6/14/19	12:46	206	15	13	none	51.40	0.48	-0.10	0.315	0.416	0.325	0.355
6/14/19	12:46	206	16	14	none	51.60	0.58	-0.42	0.333	0.439	0.363	0.381
6/14/19	12:46	206	17	15	none	52.10	0.61	-0.09	0.341	0.488	0.318	0.390
6/14/19	12:46	206	18	16	none	50.60	0.42	0.44	0.357	0.492	0.358	0.407

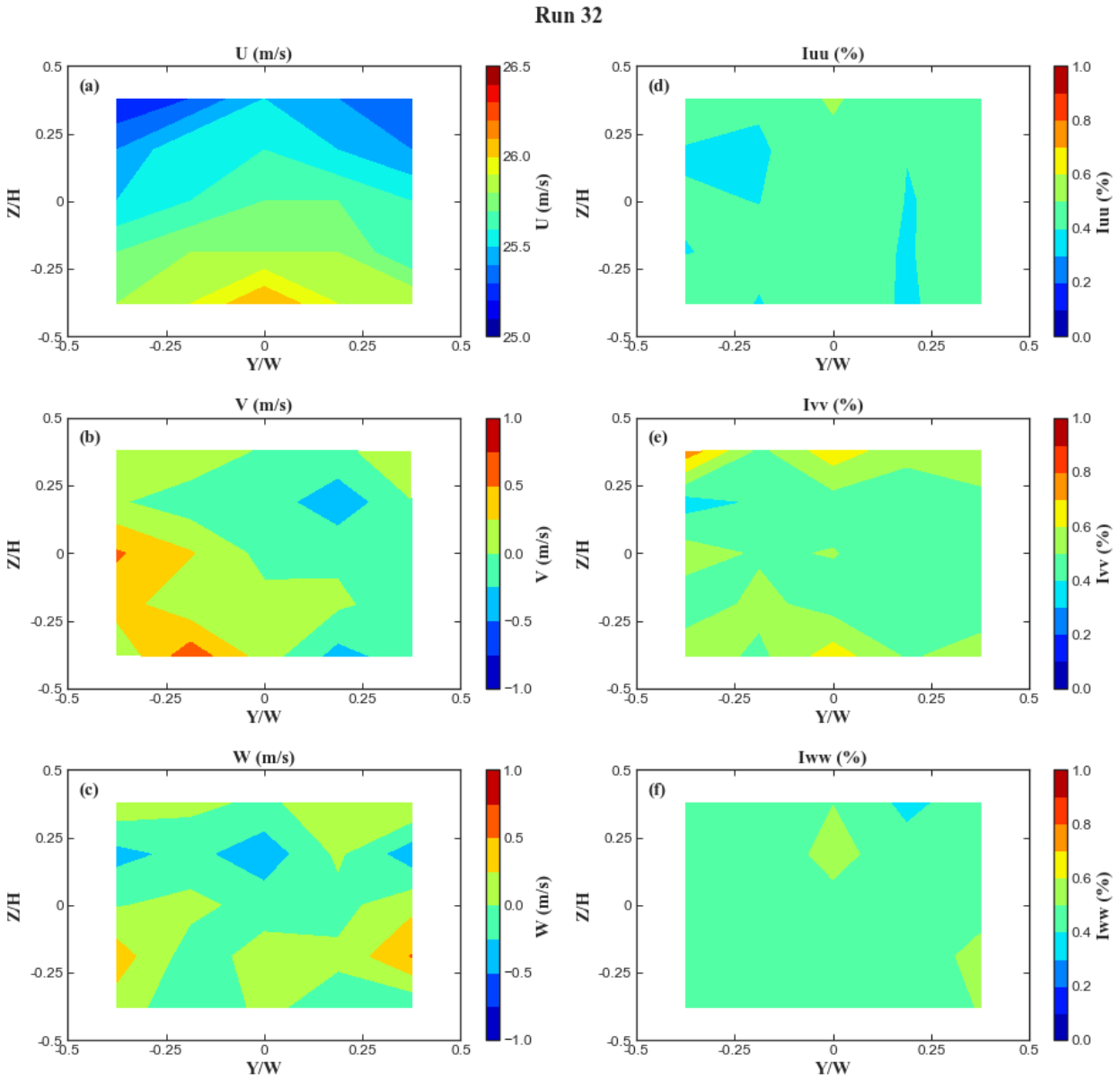
Table B1. Cobra Data Probe (cont.)

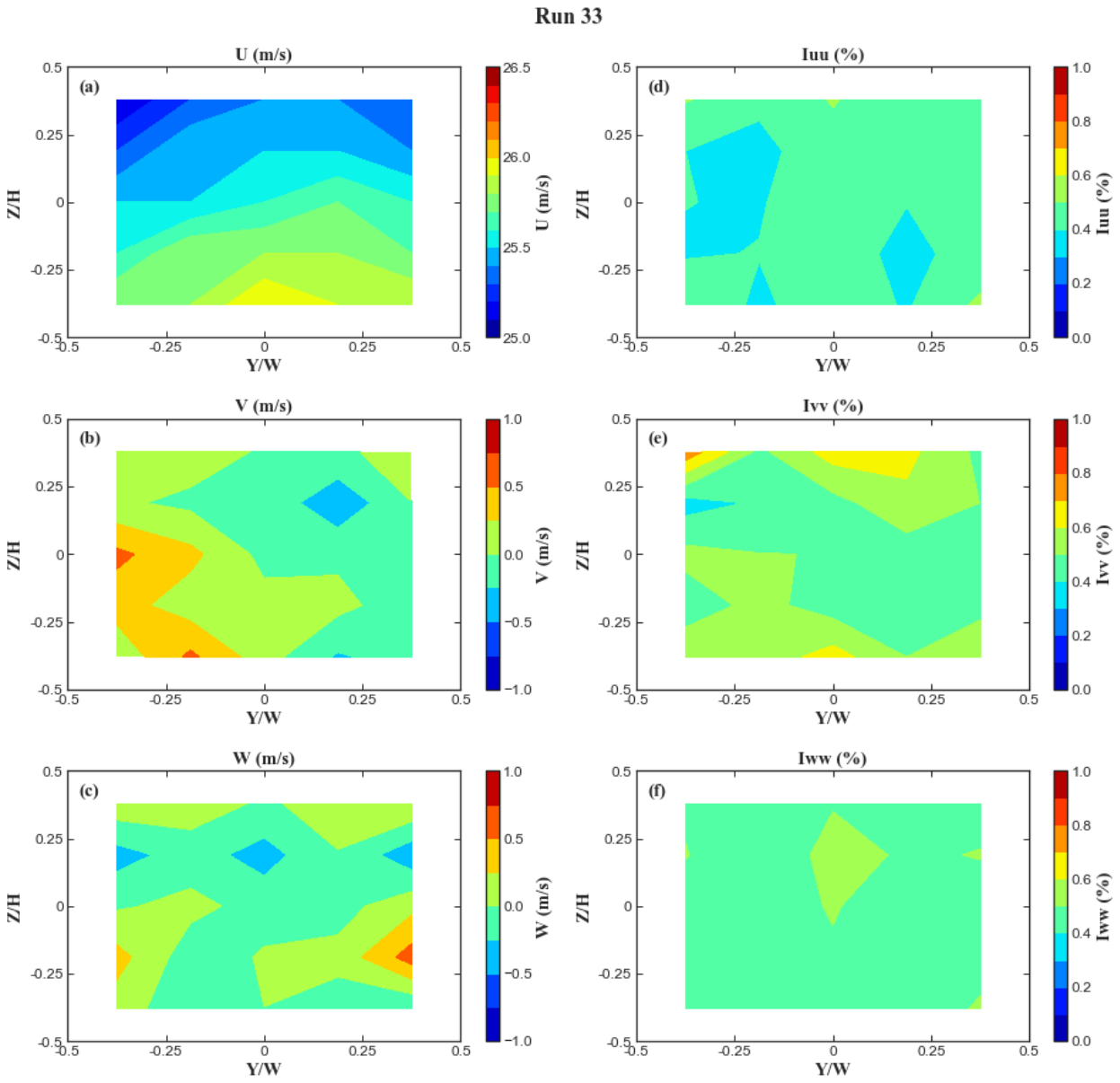
Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/14/19	12:46	206	19	17	none	51.00	-0.01	0.12	0.305	0.367	0.367	0.347
6/14/19	12:46	206	20	18	none	51.40	0.19	-0.07	0.027	0.370	0.026	0.305
6/14/19	12:46	206	21	19	none	51.60	0.02	0.05	0.027	0.347	0.027	0.030
6/14/19	12:46	206	22	20	none	52.00	0.46	0.03	0.028	0.337	0.030	0.305
6/14/19	12:46	206	23	21	none	50.70	0.63	0.43	0.358	0.603	0.342	0.451
6/14/19	12:46	206	24	22	none	51.10	0.03	-0.49	0.029	0.407	0.316	0.342
6/14/19	12:46	206	25	23	none	51.40	0.02	0.16	0.326	0.418	0.357	0.369
6/14/19	12:46	206	26	24	none	51.70	0.19	1.07	0.326	0.420	0.337	0.364
6/14/19	12:46	206	27	25	none	51.90	0.53	-0.45	0.478	0.618	0.539	0.548
6/14/19	12:46	206	28	13	none	51.40	0.58	-0.09	0.319	0.416	0.321	0.355
6/14/19	14:26	207	2	13	max	51.40	0.35	-0.10	0.336	0.449	0.352	0.382
6/14/19	14:26	207	3	1	max	50.30	0.56	0.40	0.569	0.939	0.506	0.698
6/14/19	14:26	207	4	2	max	50.70	0.74	-0.03	0.315	0.425	0.360	0.370
6/14/19	14:26	207	5	3	max	51.00	1.65	-0.15	0.376	0.438	0.466	0.428
6/14/19	14:26	207	6	4	max	51.30	1.62	0.49	0.313	0.387	0.383	0.362
6/14/19	14:26	207	7	5	max	51.70	0.90	-0.03	0.416	0.437	0.484	0.446
6/14/19	14:26	207	8	6	max	50.50	0.03	0.03	0.359	0.456	0.402	0.408
6/14/19	14:26	207	9	7	max	50.90	0.37	-0.03	0.028	0.333	0.306	0.307
6/14/19	14:26	207	10	8	max	51.20	1.12	0.11	0.027	0.407	0.029	0.327
6/14/19	14:26	207	11	9	max	51.40	1.24	-0.02	0.303	0.415	0.316	0.348
6/14/19	14:26	207	12	10	max	51.80	0.80	-0.03	0.028	0.375	0.030	0.321
6/14/19	14:26	207	13	11	max	50.40	0.30	0.02	0.348	0.497	0.377	0.412
6/14/19	14:26	207	14	12	max	51.00	0.37	-0.09	0.319	0.423	0.321	0.358
6/14/19	14:26	207	15	13	max	51.30	0.43	-0.07	0.335	0.449	0.354	0.383
6/14/19	14:26	207	16	14	max	51.50	0.53	-0.40	0.342	0.449	0.367	0.389
6/14/19	14:26	207	17	15	max	52.00	0.54	-0.08	0.339	0.493	0.332	0.395
6/14/19	14:26	207	18	16	max	50.50	0.38	0.48	0.350	0.526	0.373	0.424
6/14/19	14:26	207	19	17	max	50.90	-0.13	0.13	0.314	0.415	0.380	0.372

Table B1. Cobra Data Probe (concluded).

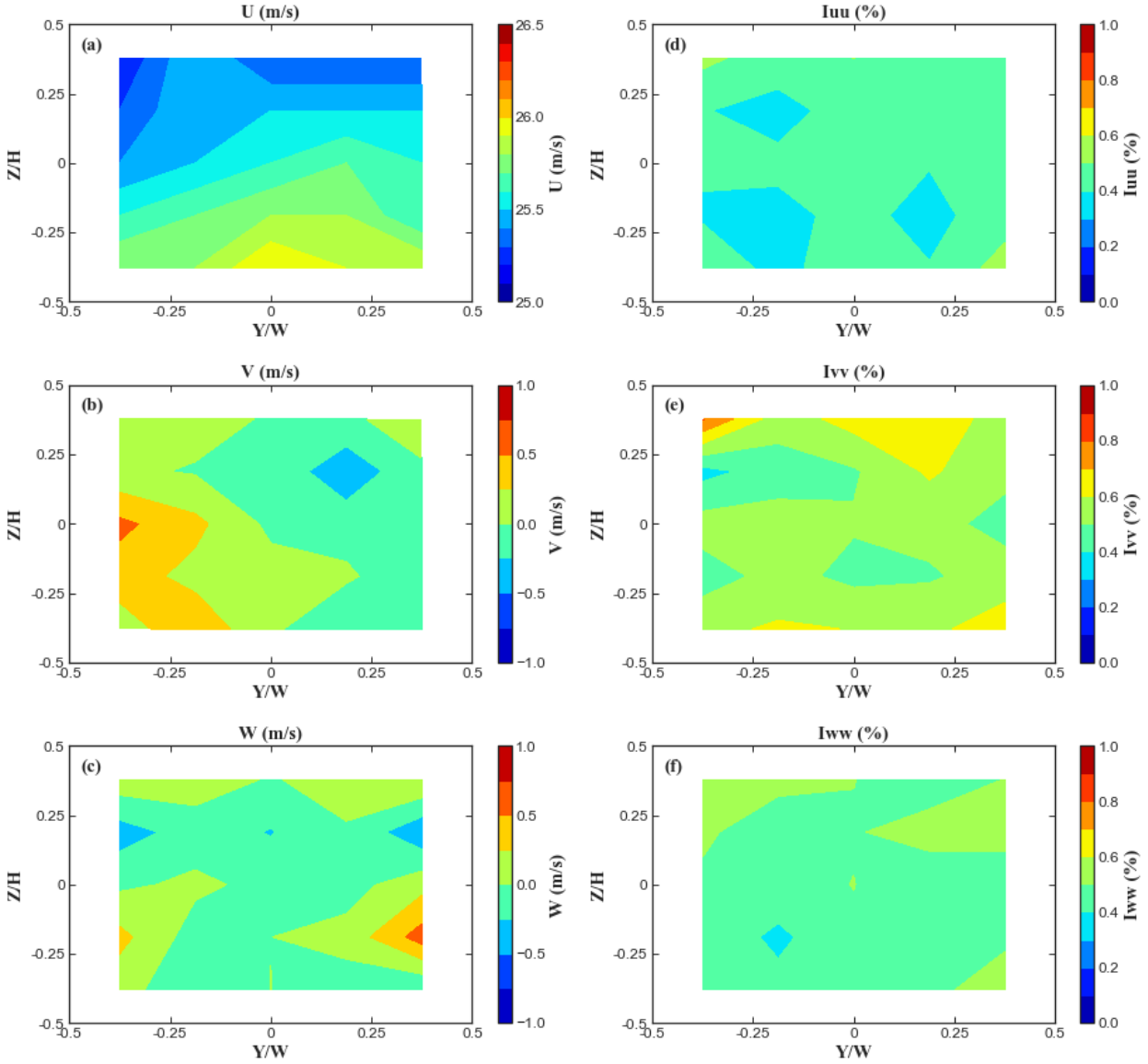
Date	Time	Run	Point	Probe Location	Ambient Wind (%)	U (m/s)	V (m/s)	W (m/s)	Iuu (%)	Ivv (%)	Iww (%)	Iuvw (%)
6/14/19	14:26	207	20	18	max	51.30	0.17	-0.08	0.028	0.394	0.027	0.321
6/14/19	14:26	207	21	19	max	51.50	0.18	0.01	0.028	0.355	0.029	0.308
6/14/19	14:26	207	22	20	max	51.90	0.42	-0.01	0.030	0.383	0.333	0.340
6/14/19	14:26	207	23	21	max	50.60	0.58	0.44	0.341	0.552	0.340	0.423
6/14/19	14:26	207	24	22	max	51.00	0.02	-0.53	0.302	0.417	0.332	0.354
6/14/19	14:26	207	25	23	max	51.20	0.12	0.17	0.351	0.431	0.389	0.391
6/14/19	14:26	207	26	24	max	51.50	0.12	1.09	0.340	0.424	0.352	0.374
6/14/19	14:26	207	27	25	max	51.80	0.61	-0.49	0.469	0.608	0.562	0.549
6/14/19	14:26	207	28	13	max	51.30	0.55	-0.03	0.334	0.452	0.355	0.384

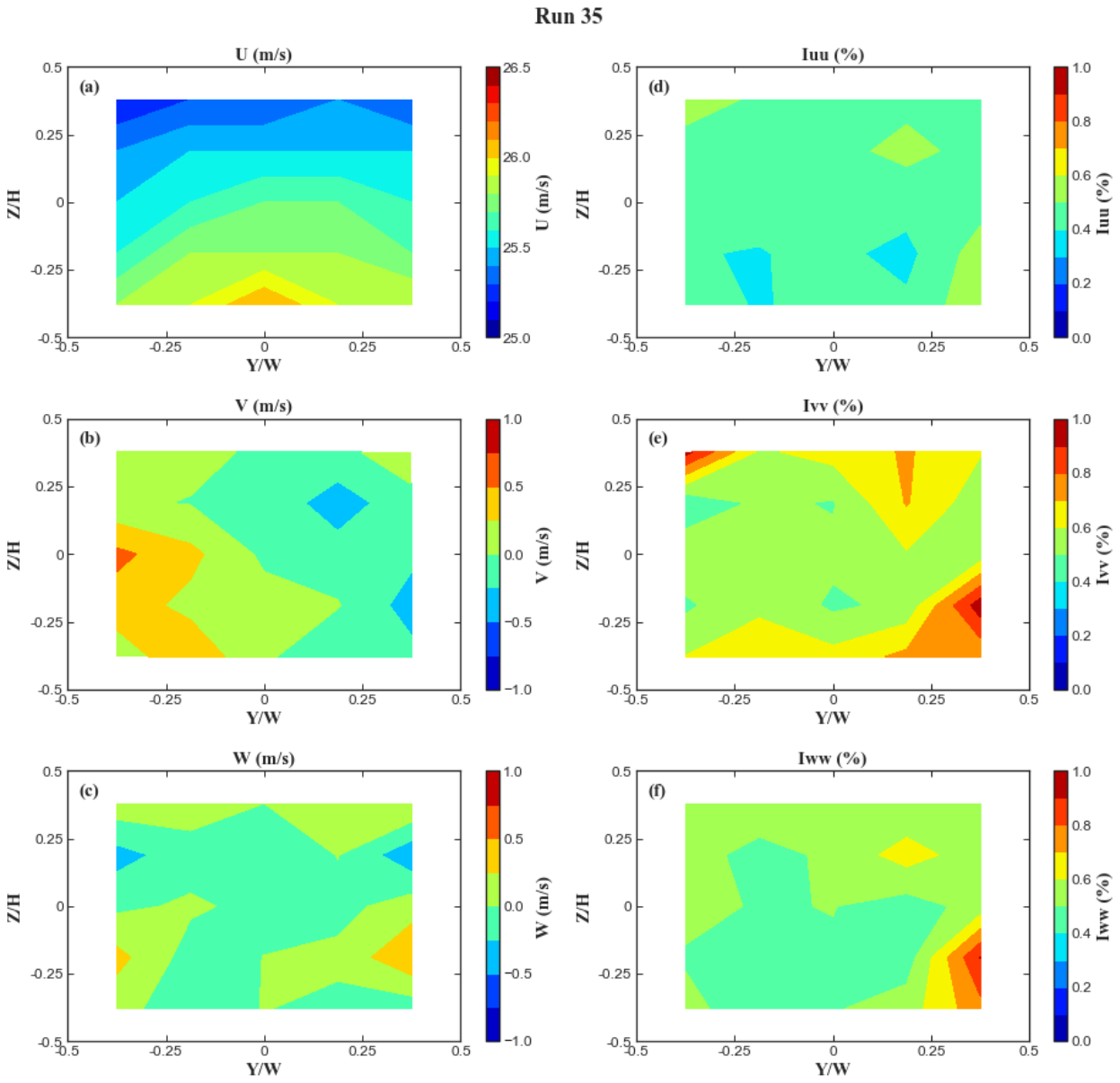
LINE AND AREA SURVEY PLOTS (RUN 32 TO RUN 207)



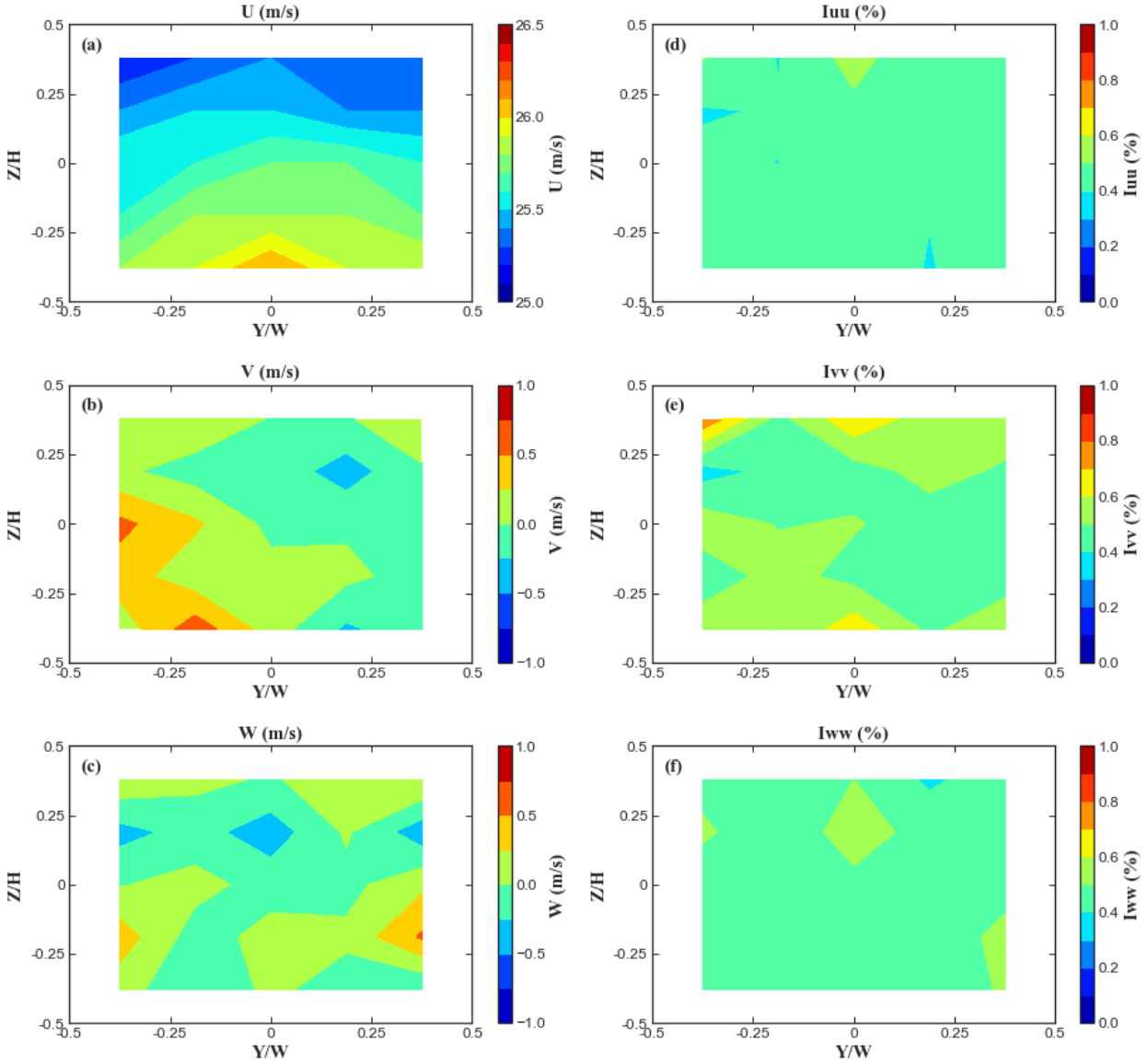

Run 33
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

Run 34

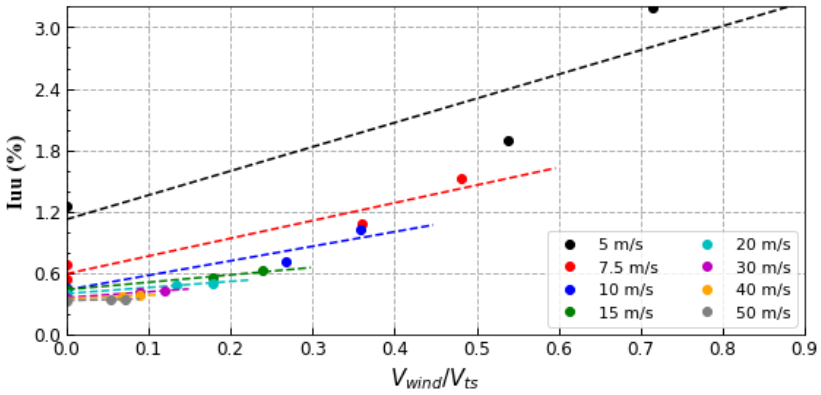


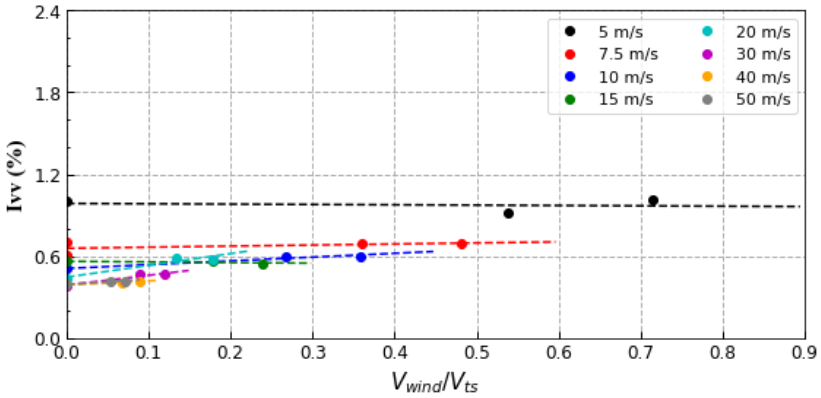

Run 35
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

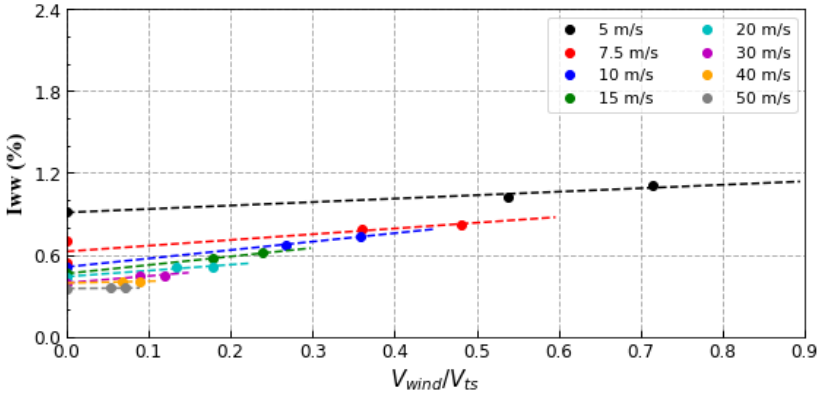
Run 38

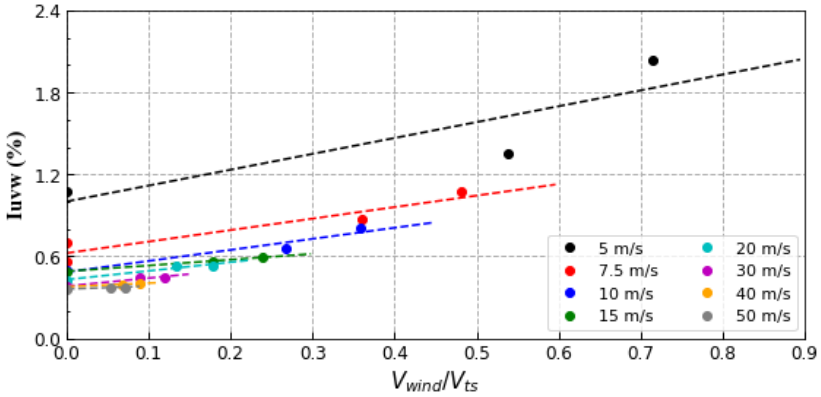


Run 39

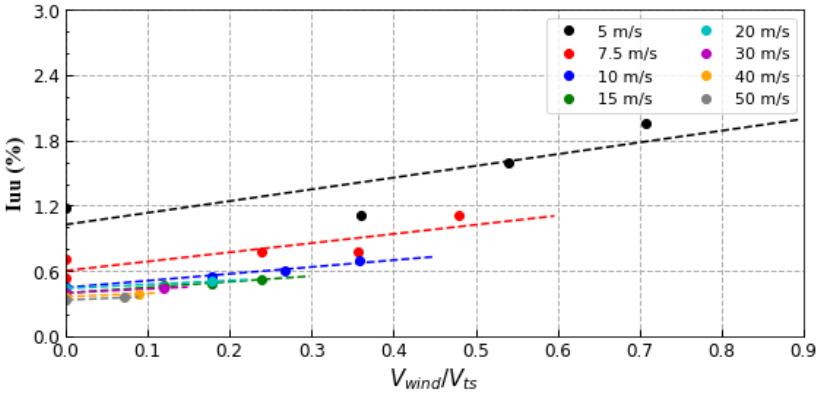

Iuu (%)
V_{wind}/V_{ts}
5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s

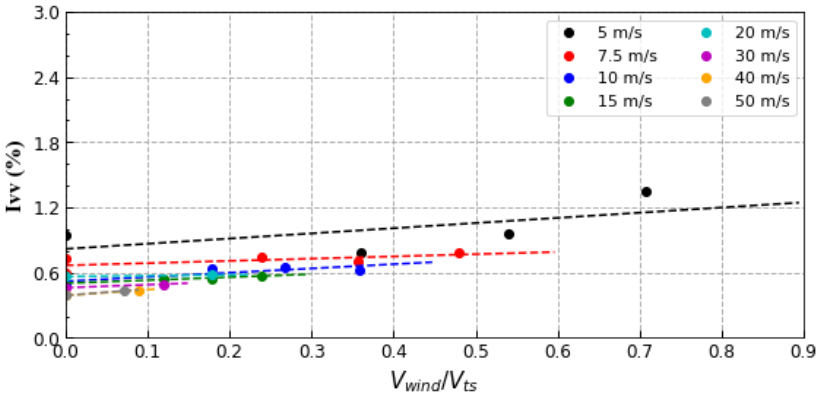

Ivv (%)
V_{wind}/V_{ts}
5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s

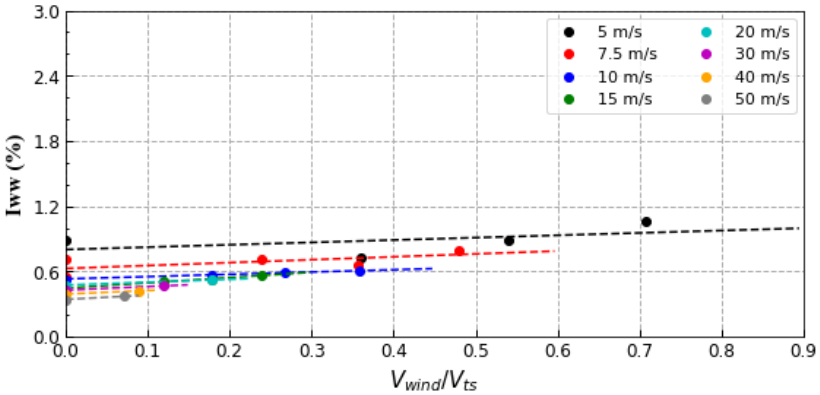

Iww (%)
V_{wind}/V_{ts}
5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s

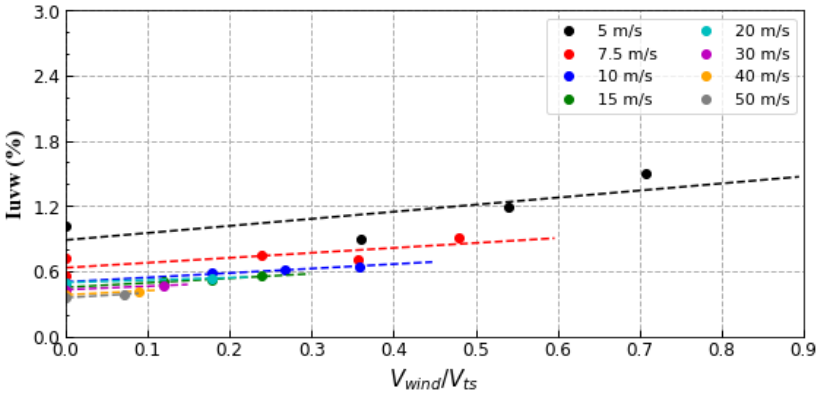

Iuvw (%)
V_{wind}/V_{ts}
5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s

Run 41

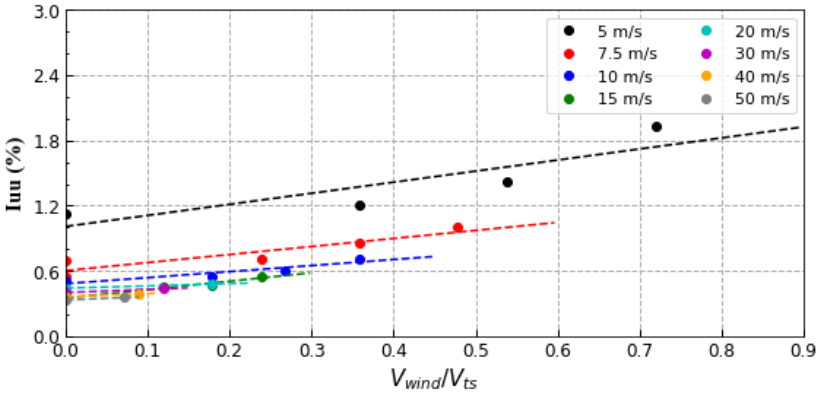

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

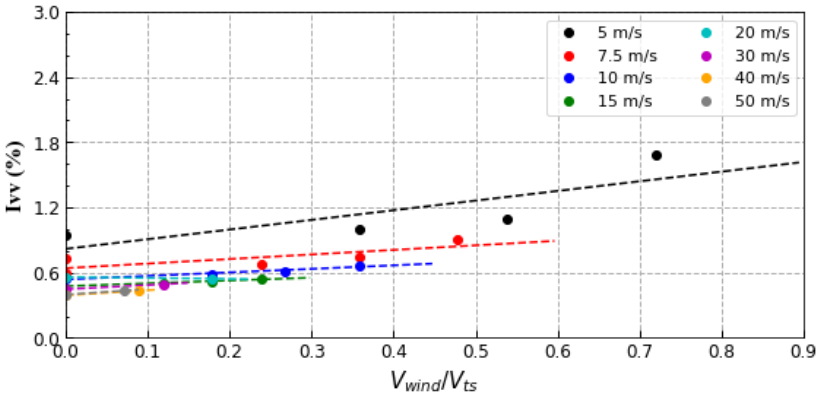

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

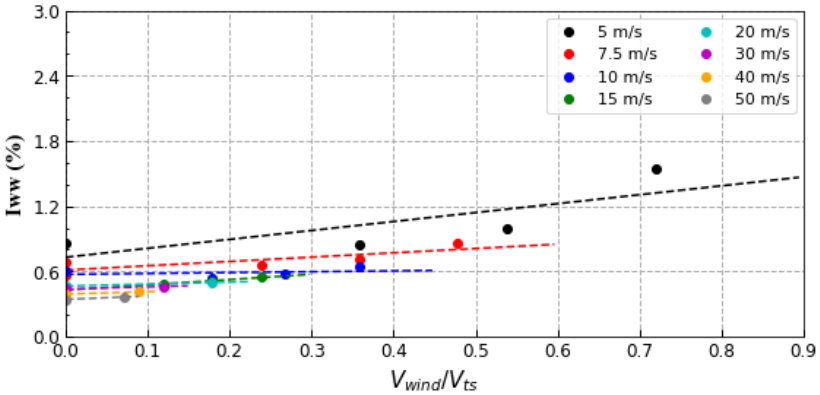

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

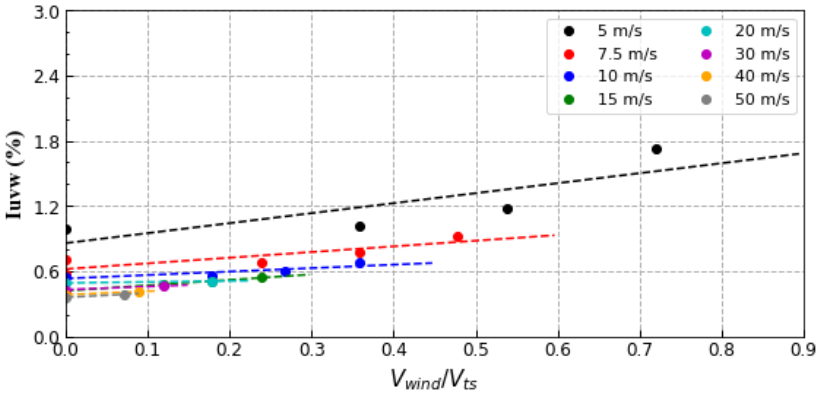

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

Run 42

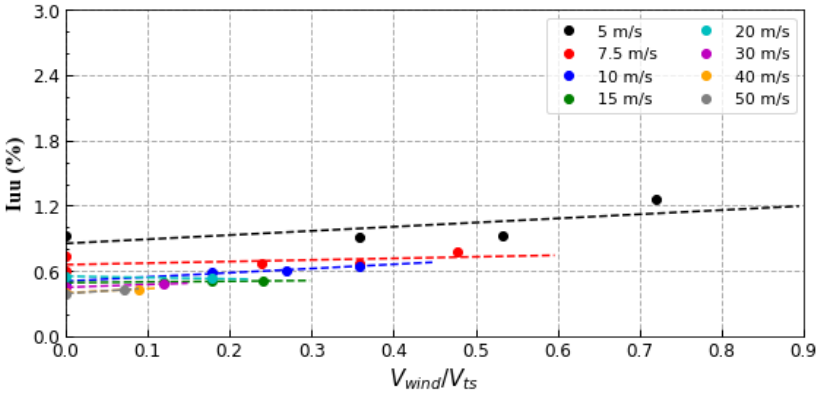

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

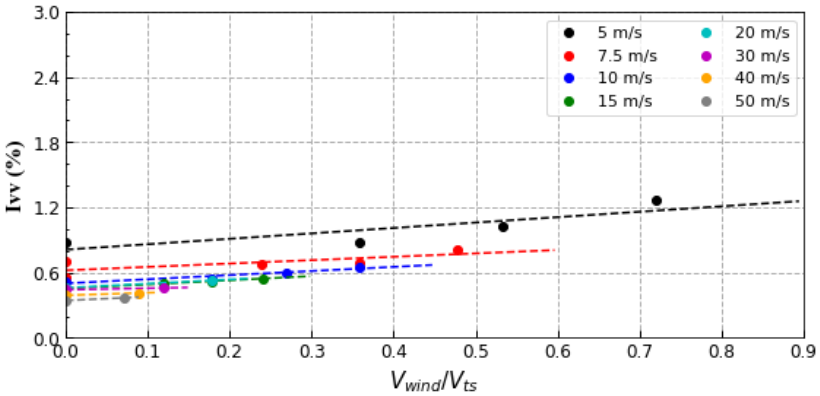

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

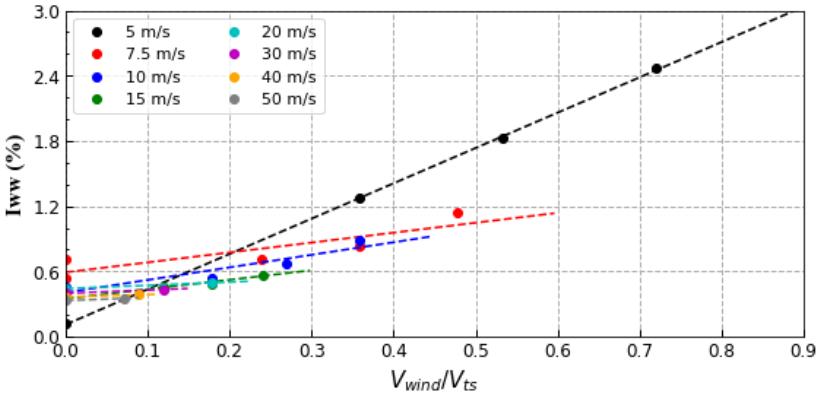

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

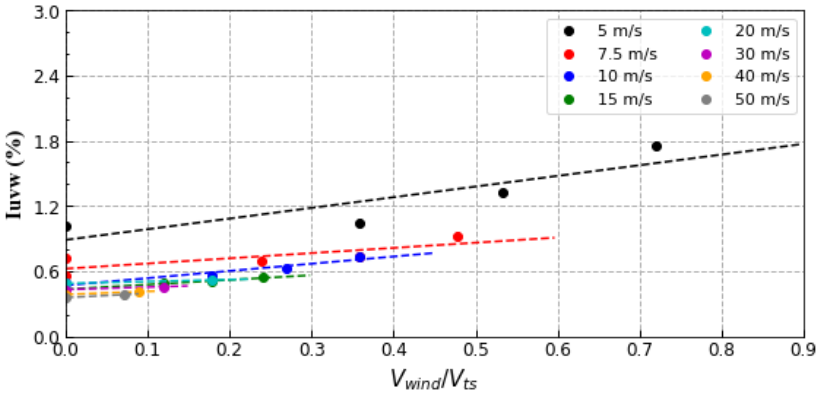

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

Run 44

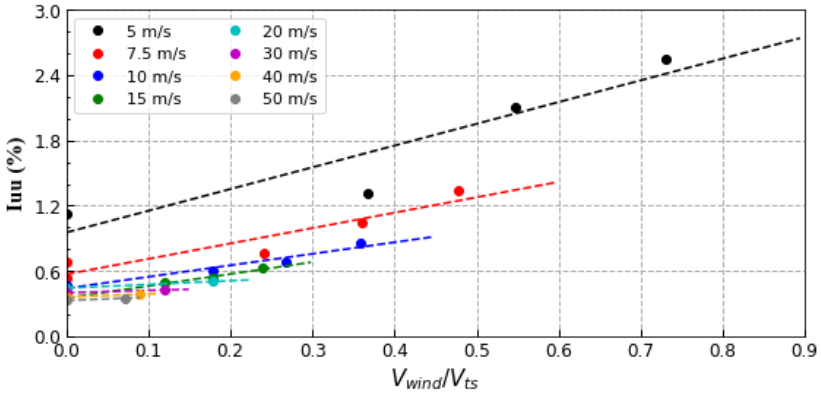

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

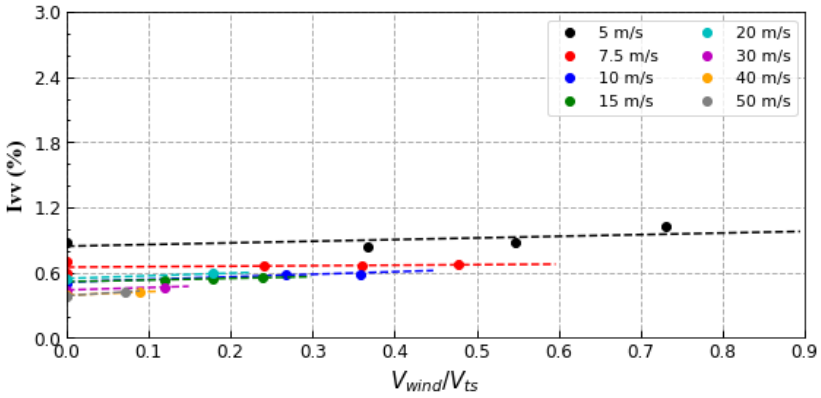

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

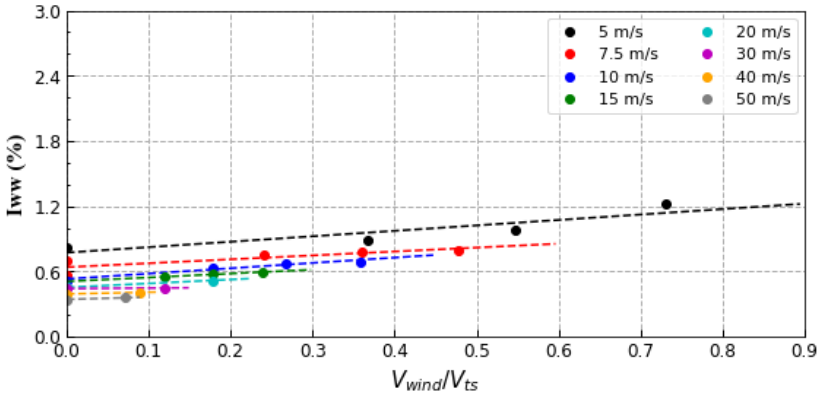

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

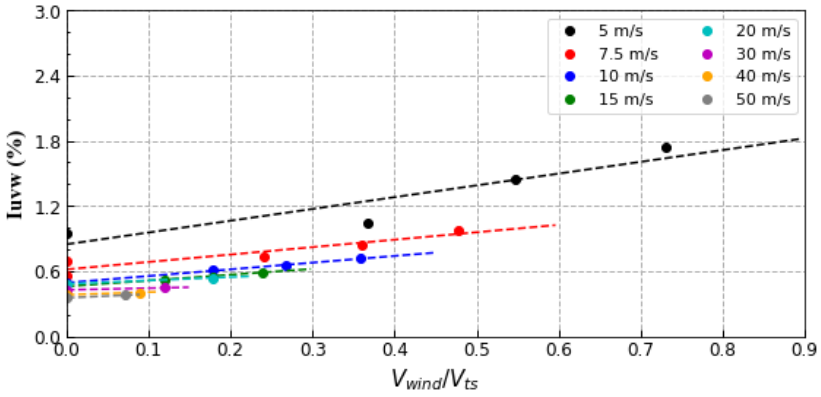

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

Run 45

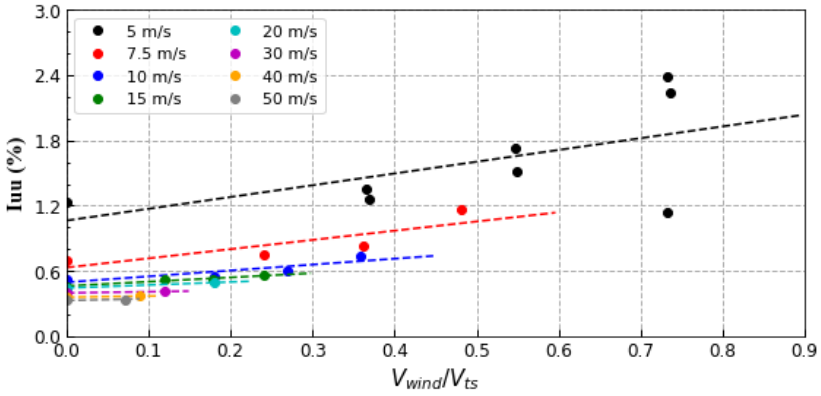

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

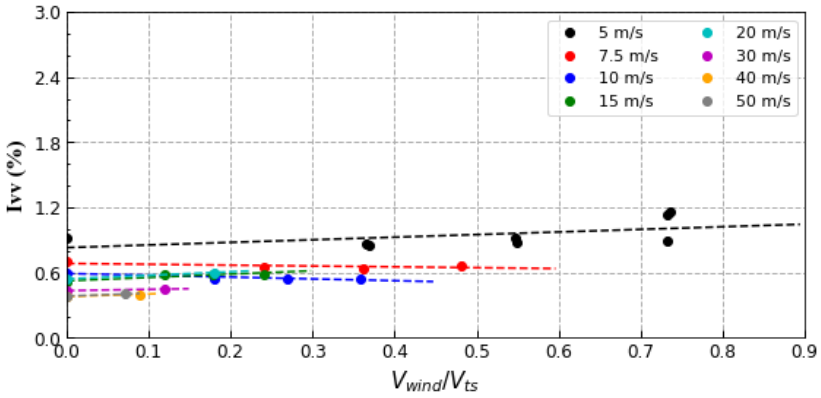

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

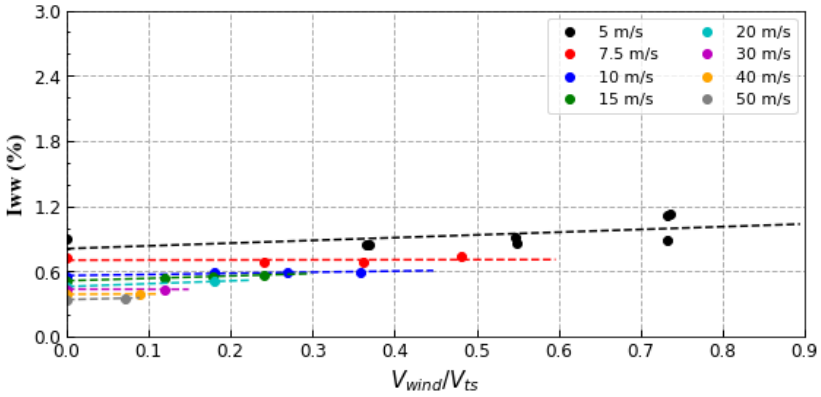

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

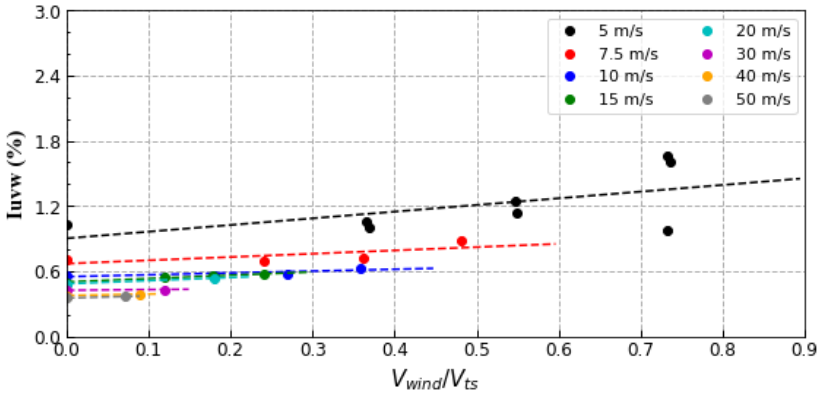

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

Run 46

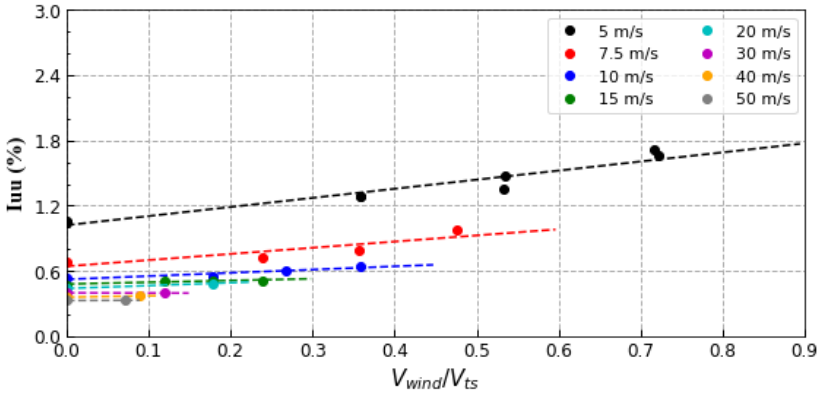

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

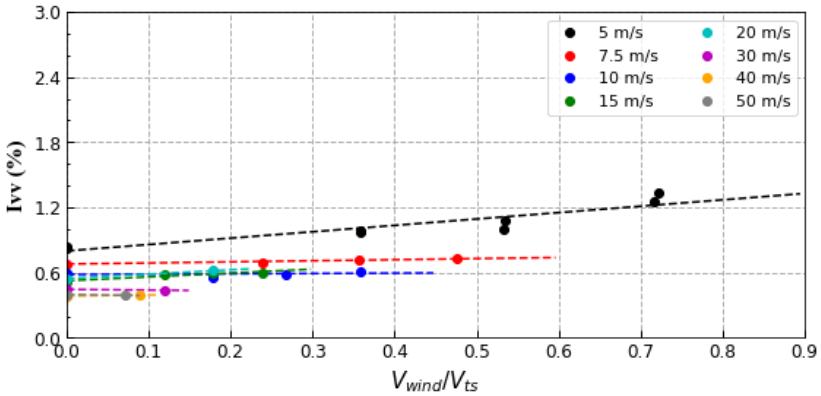

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

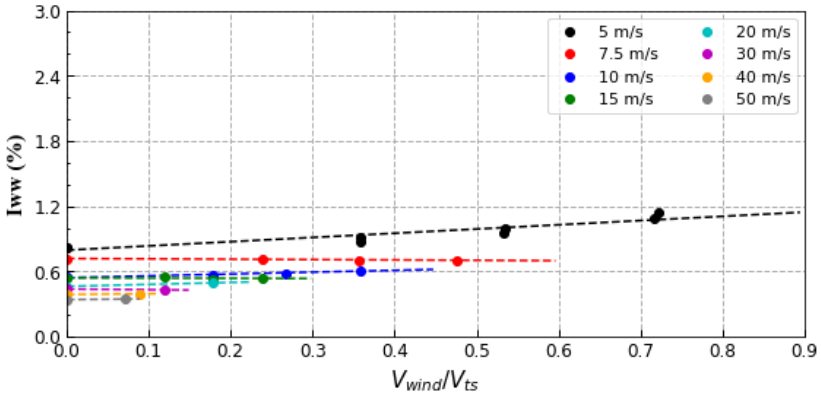

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

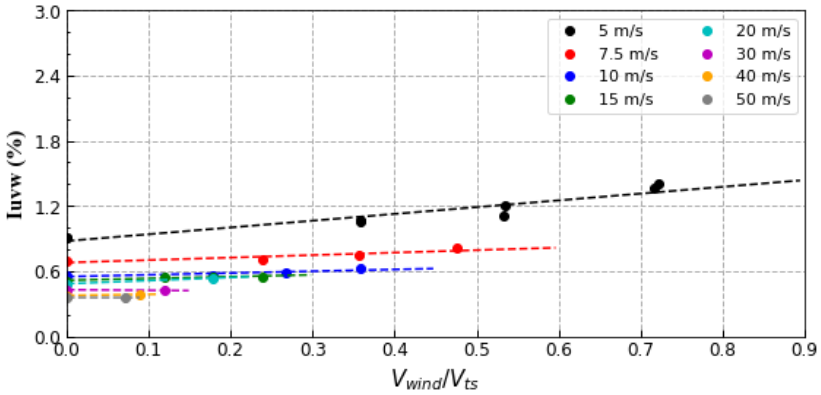

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

Run 47

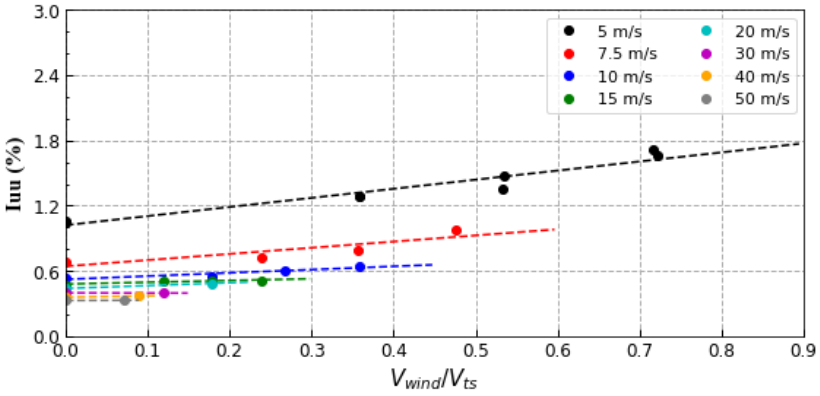

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

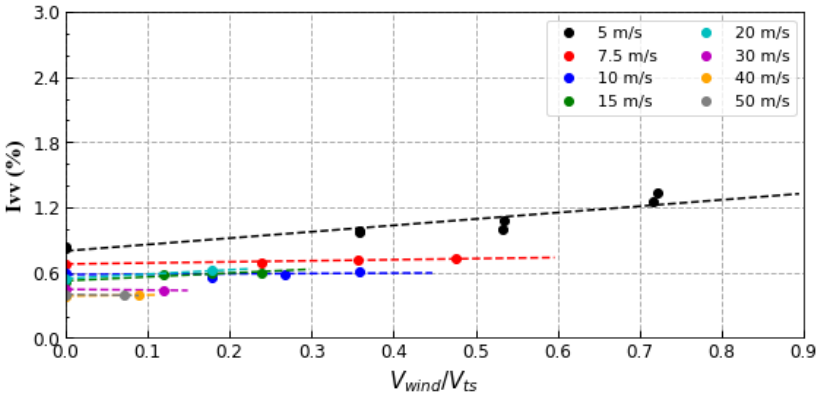

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

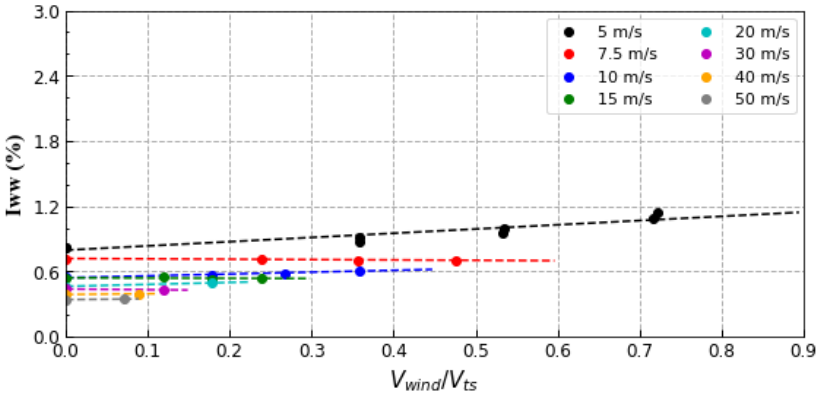

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

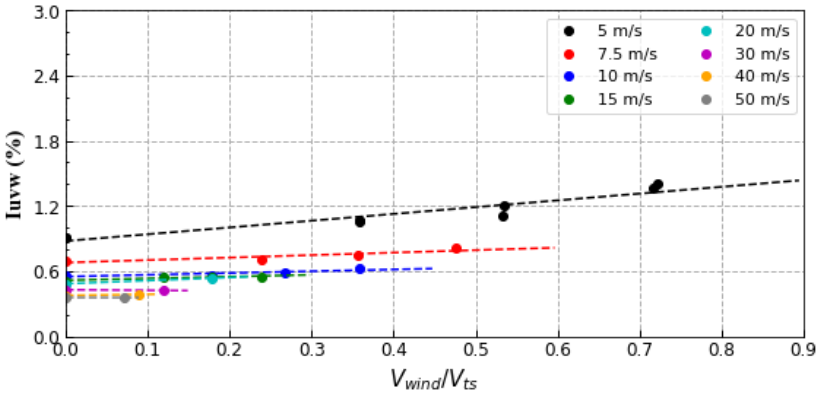

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

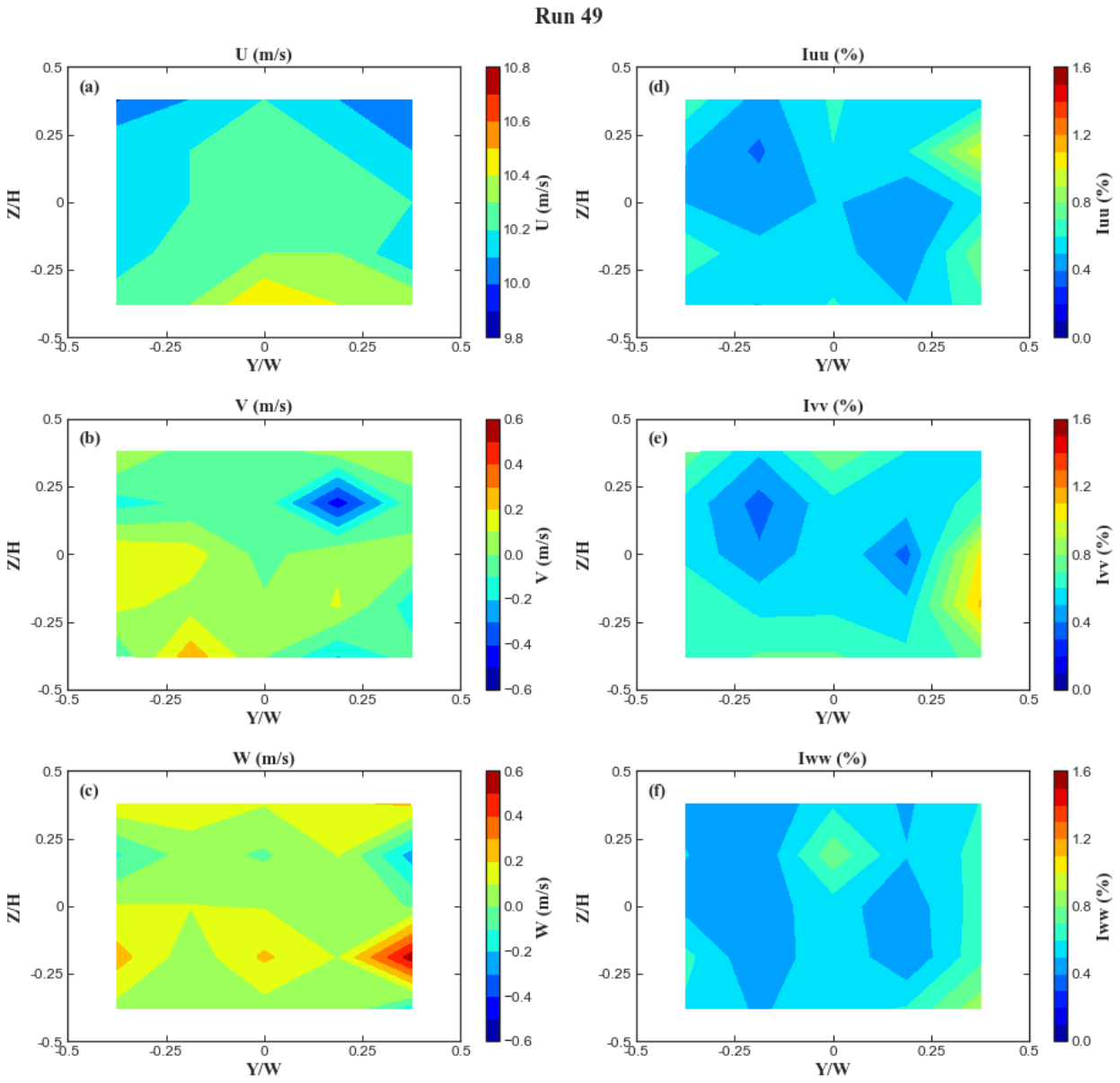
Run 48

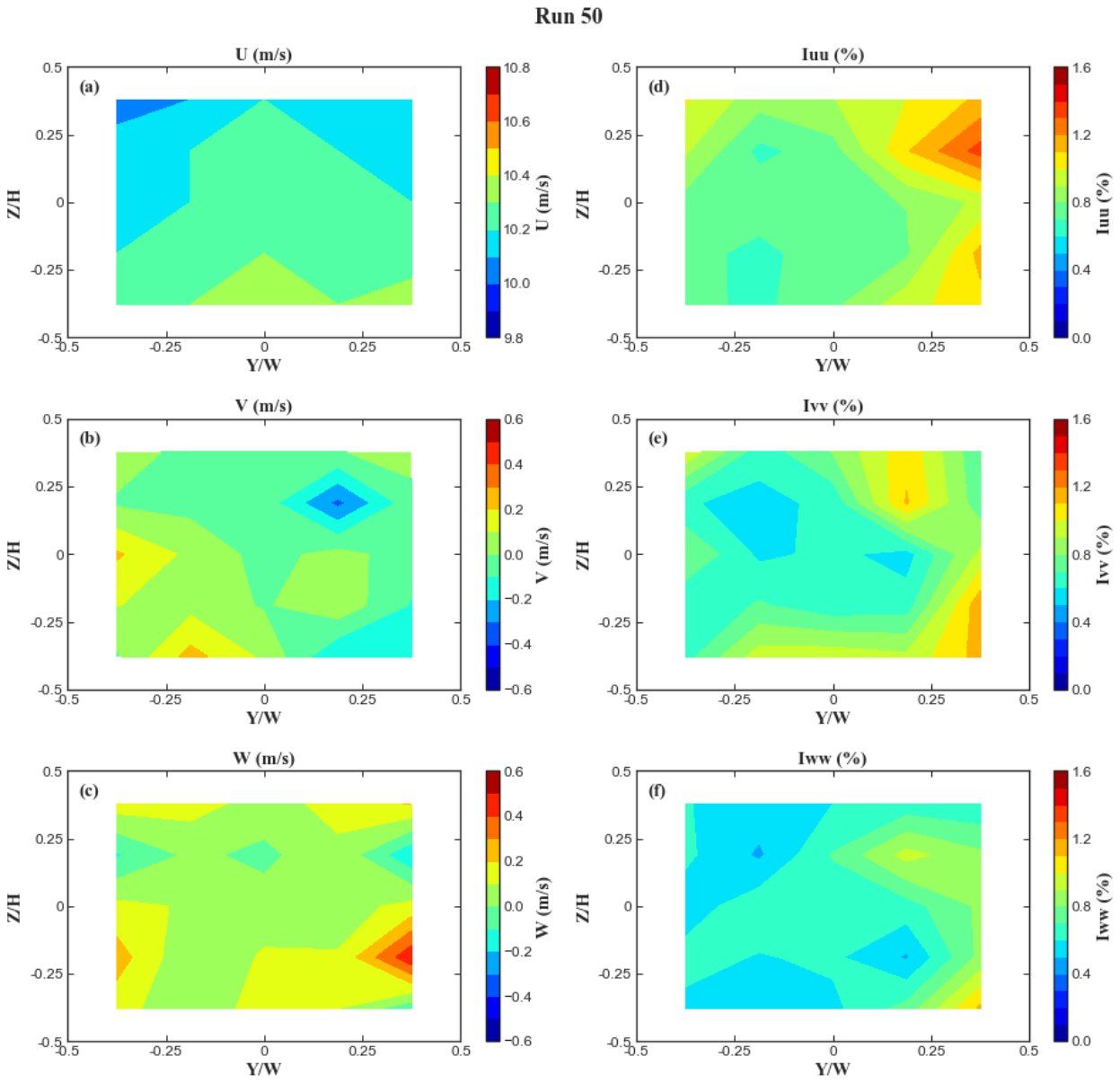

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}

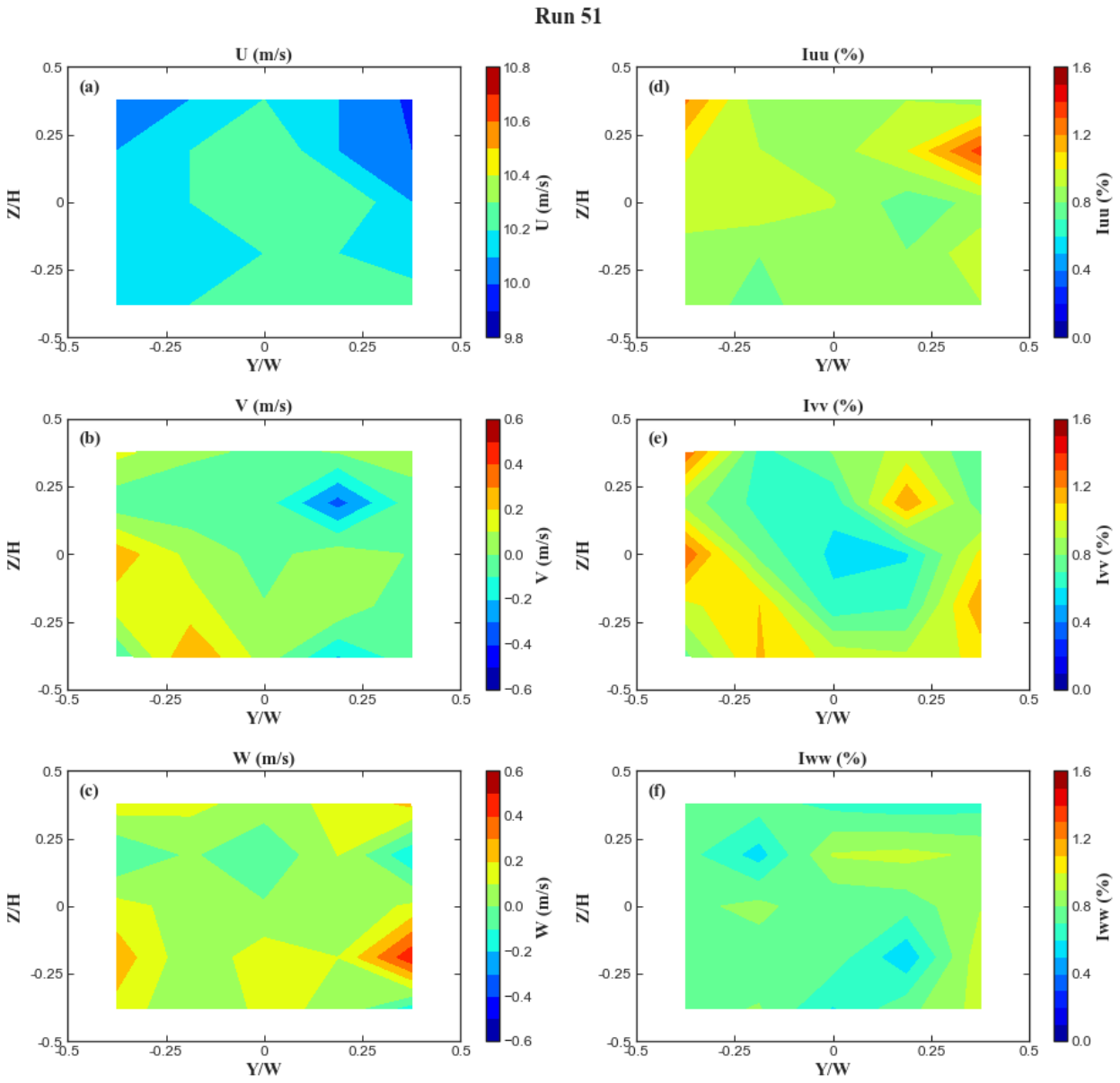

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

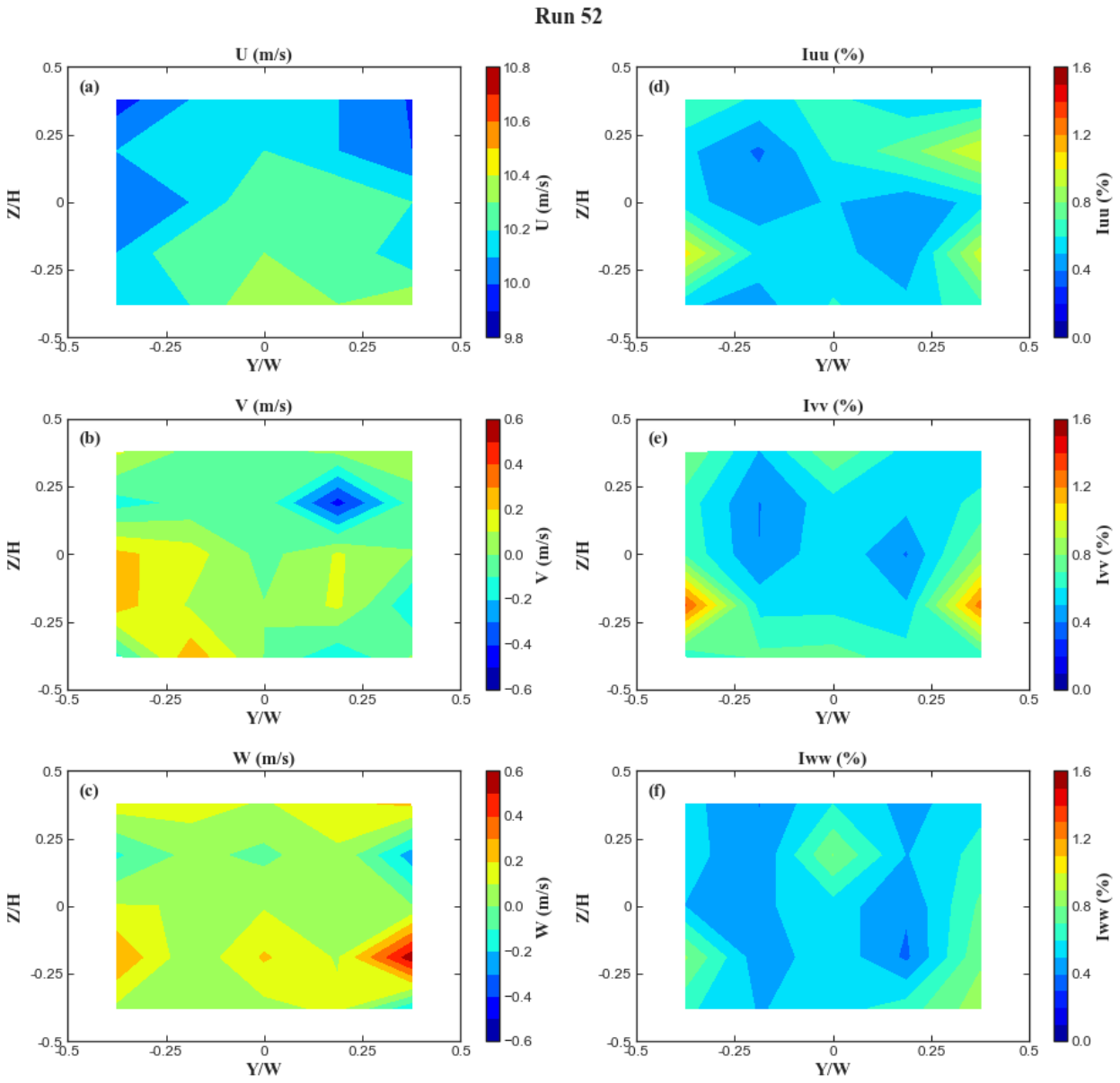

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

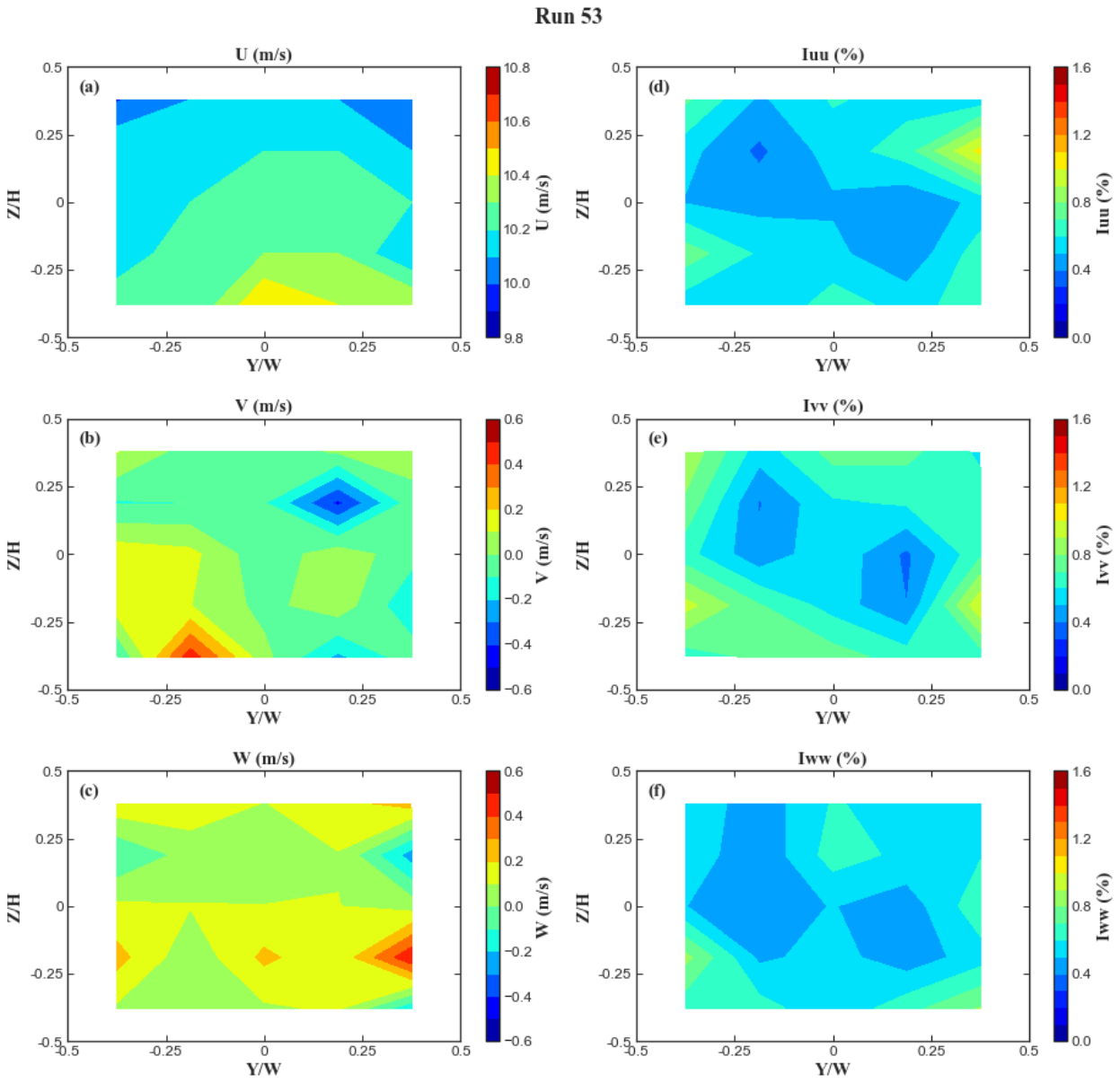

5 m/s
7.5 m/s
10 m/s
15 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

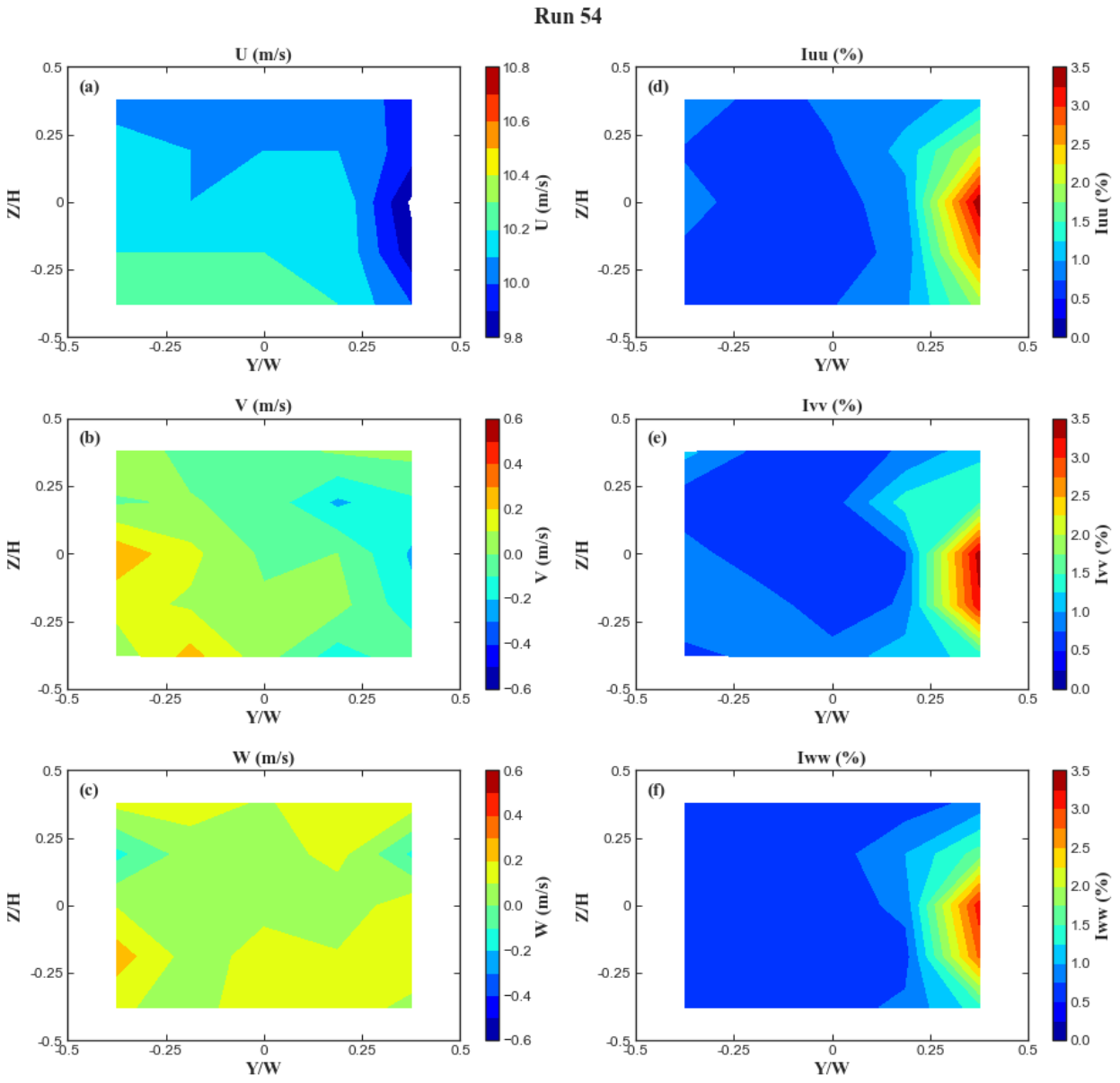

Run 49
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

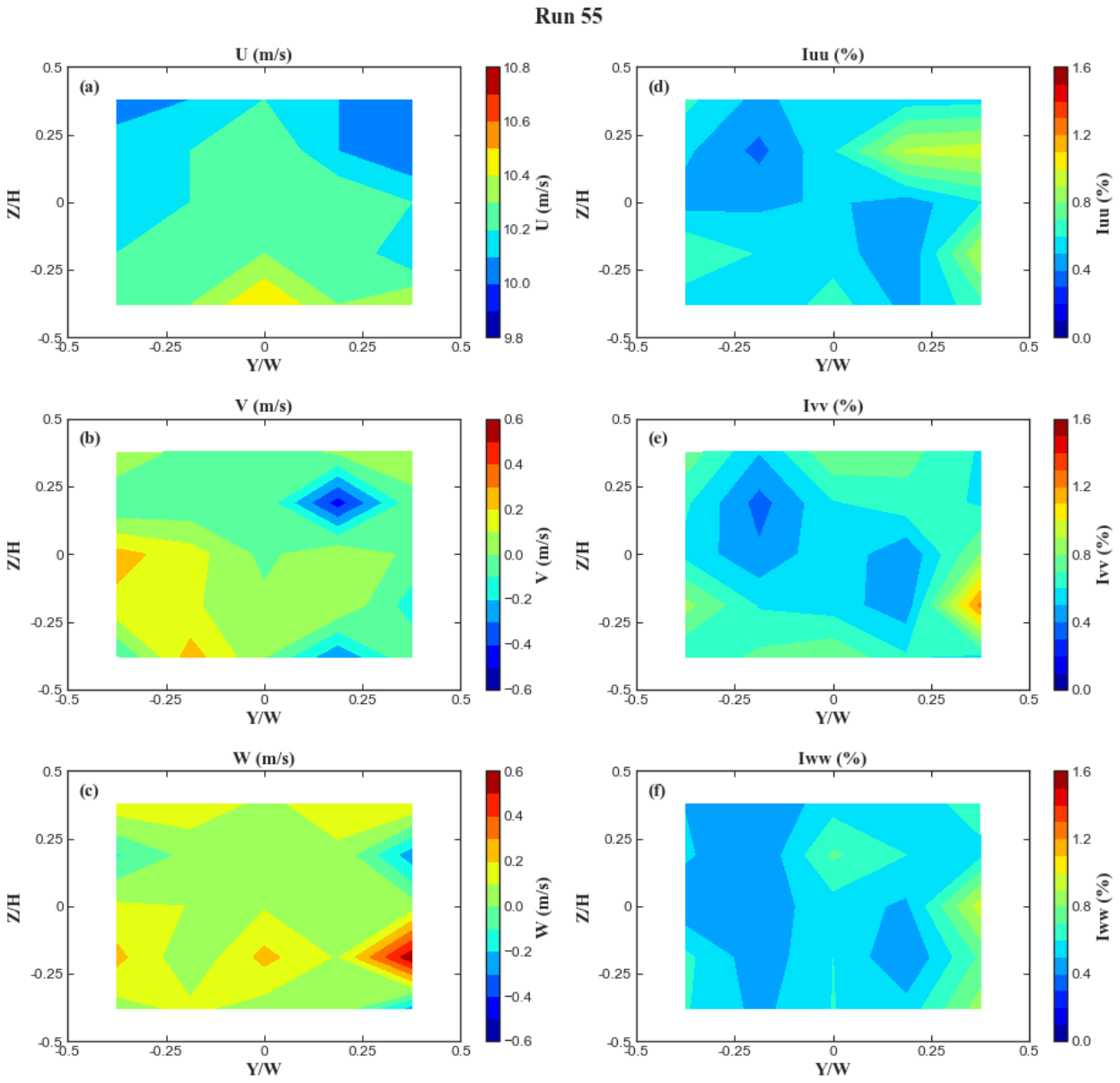

Run 50
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

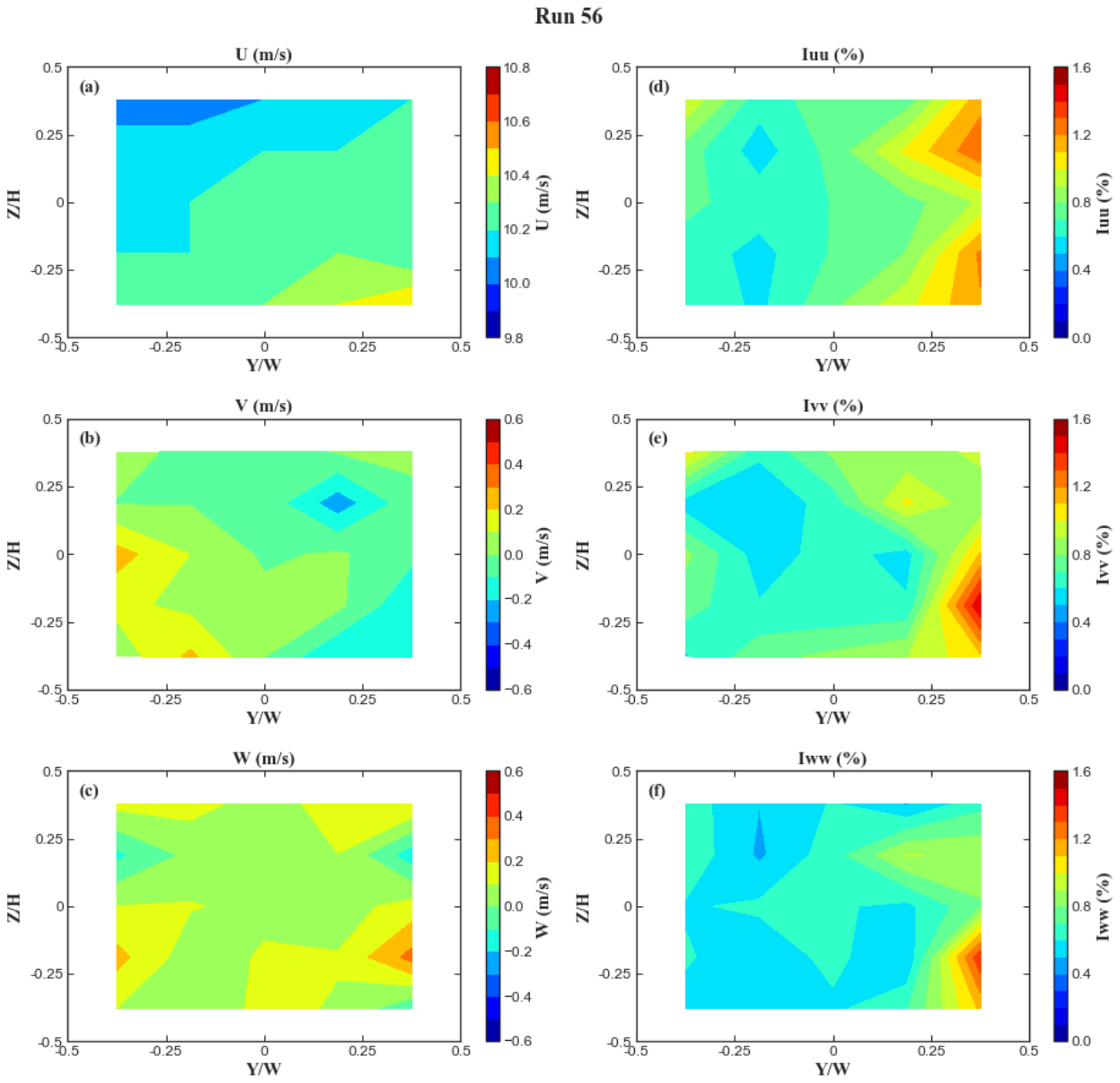

Run 51
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 52
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

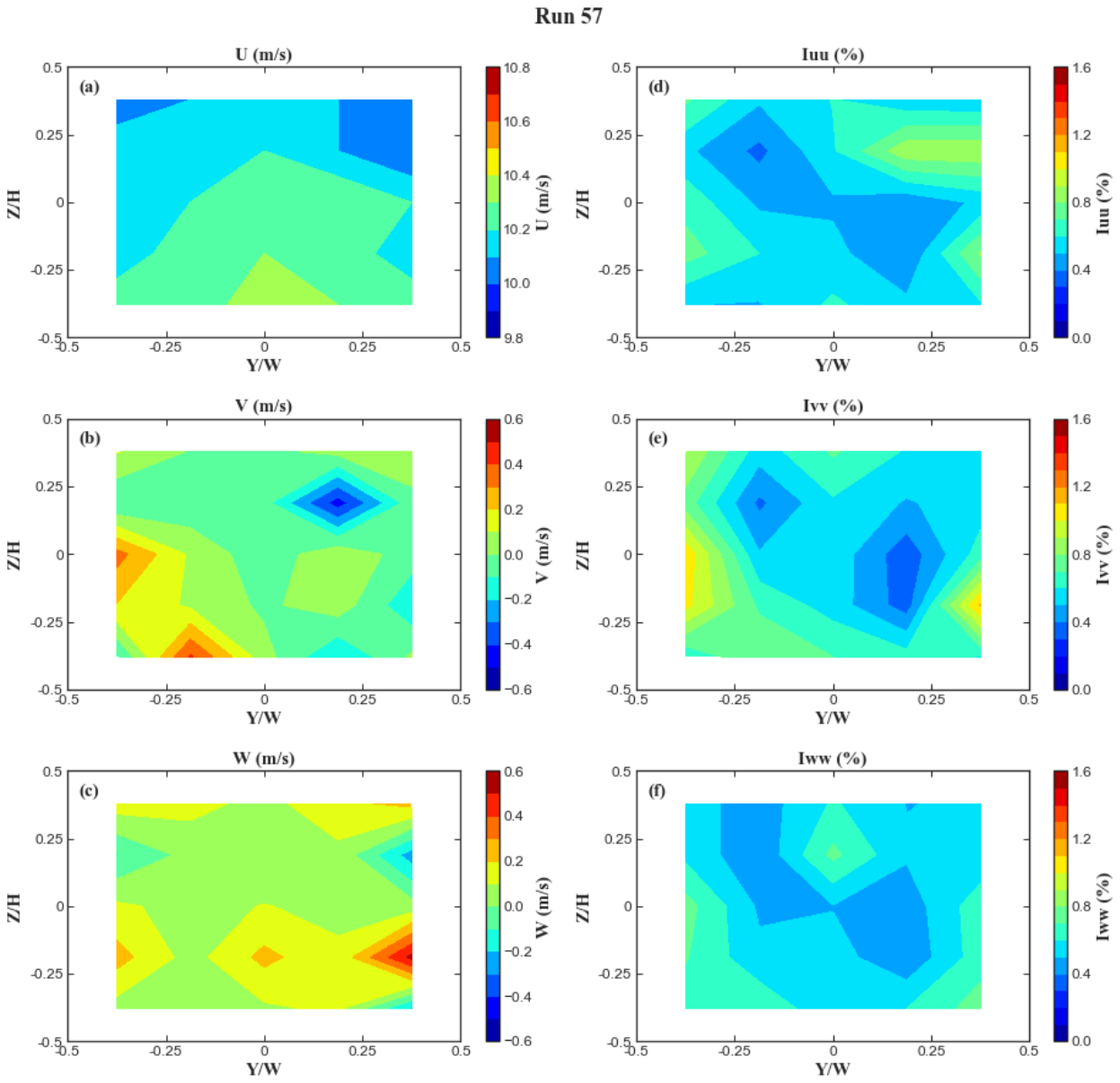

Run 53
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

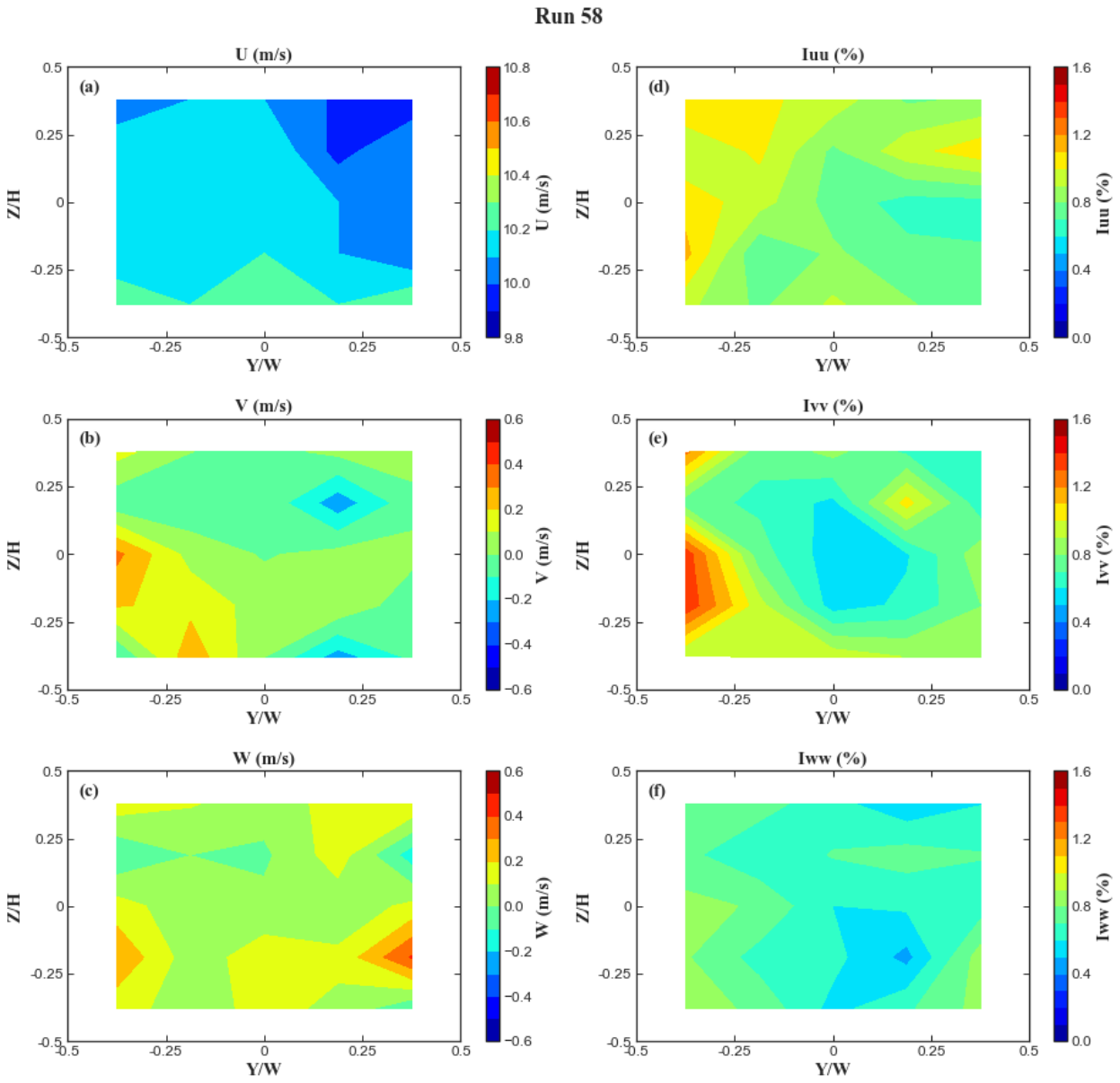

Run 54
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

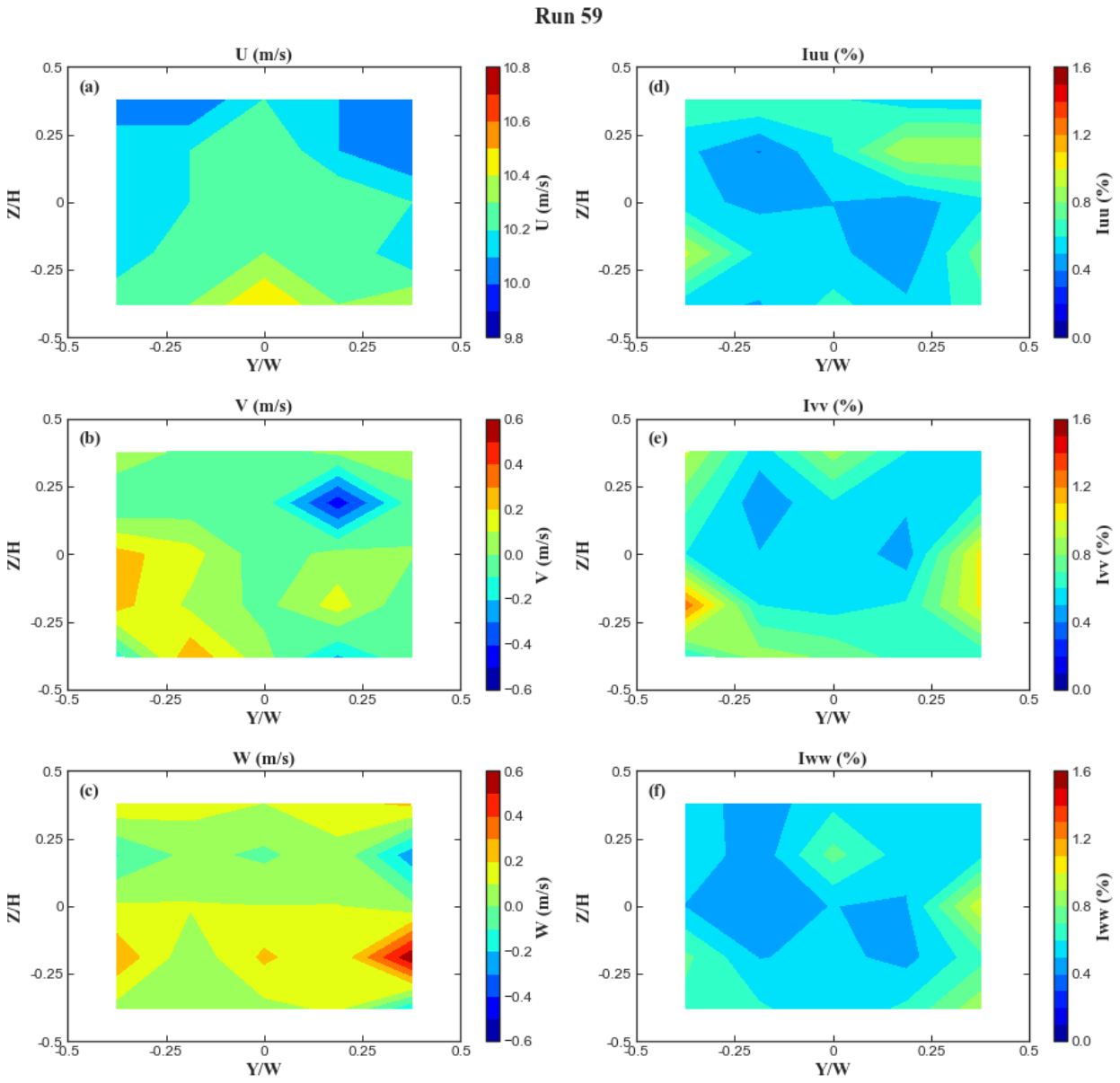

Run 55
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

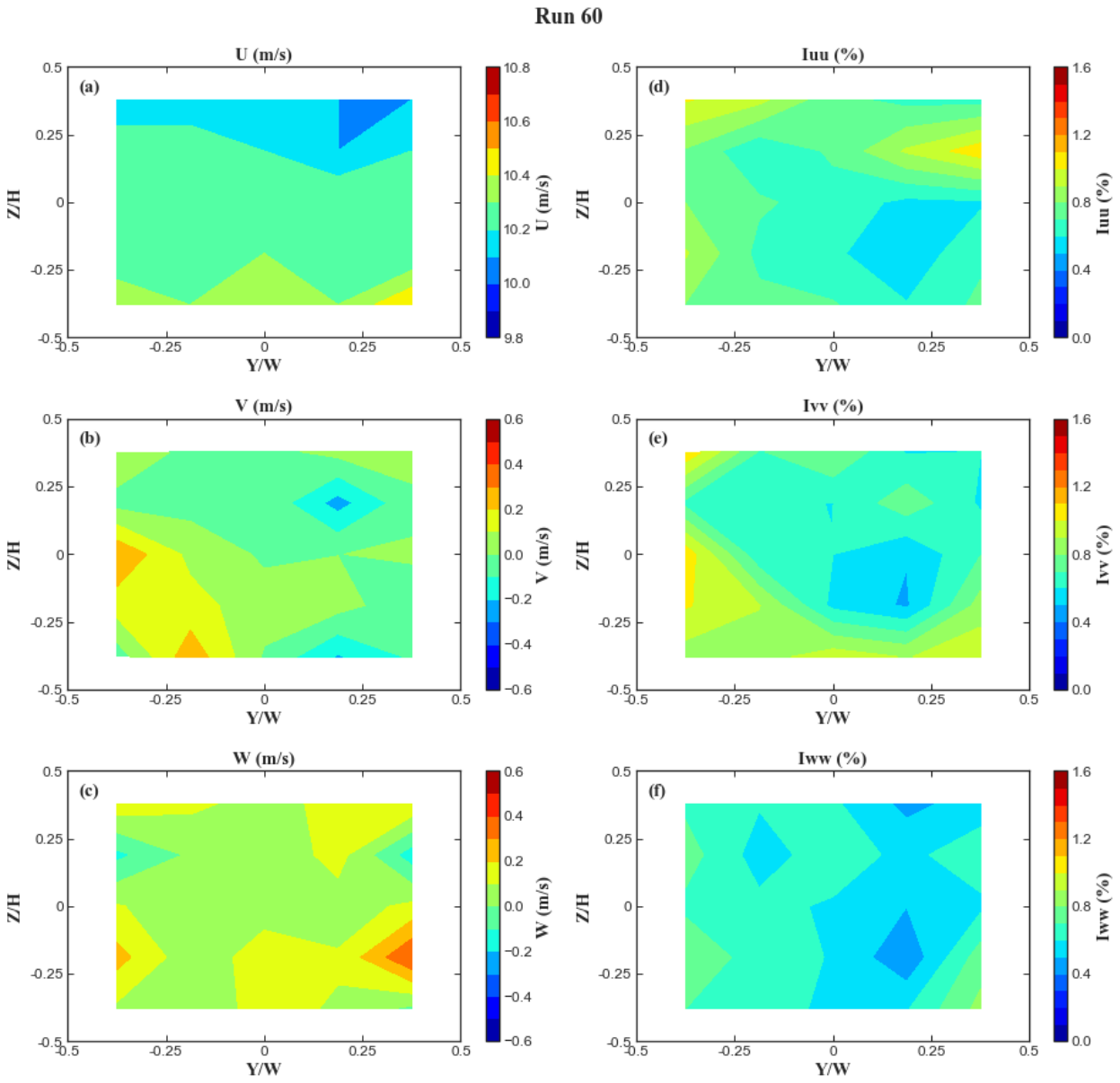

Run 56
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

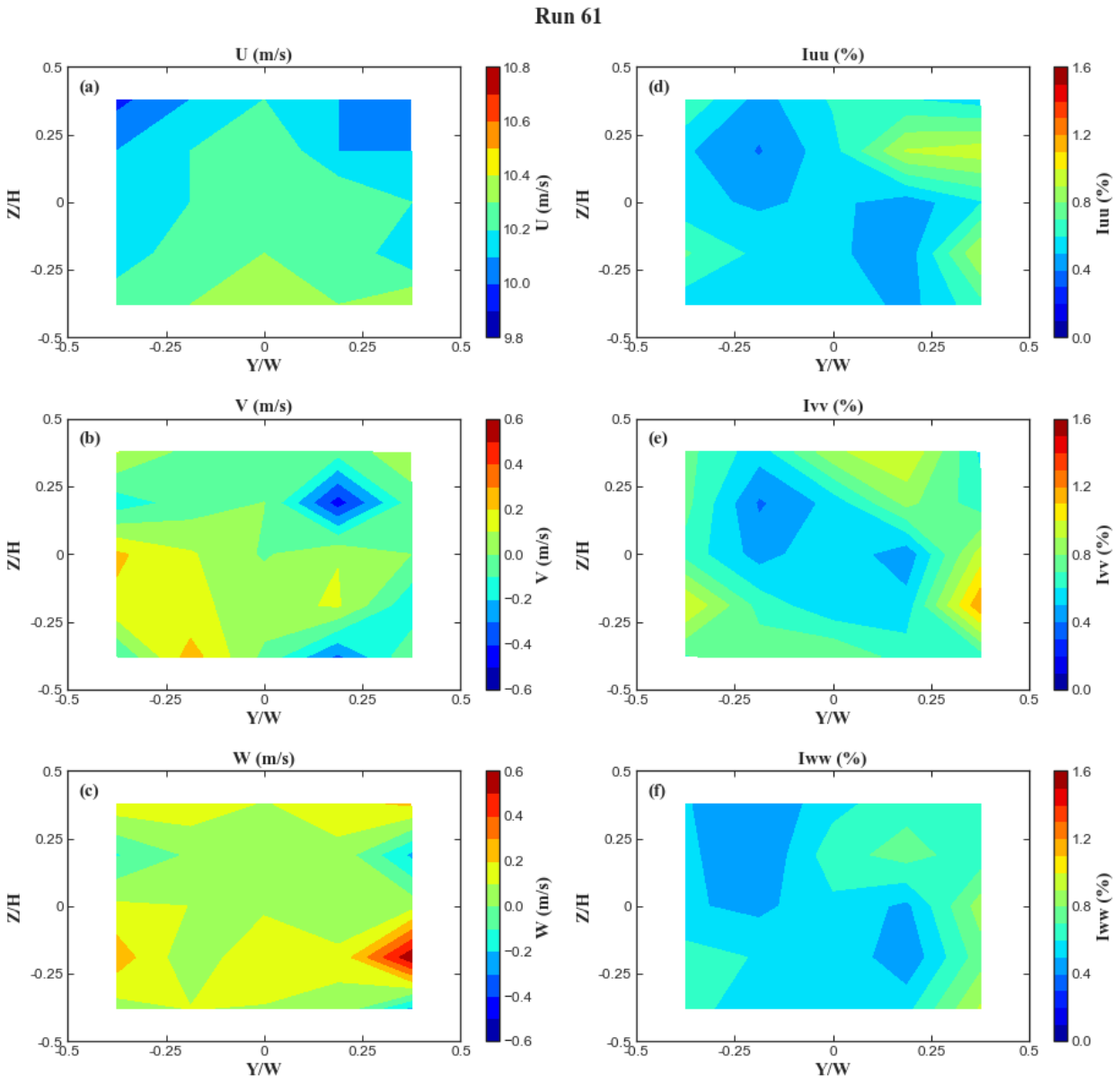
Run 57

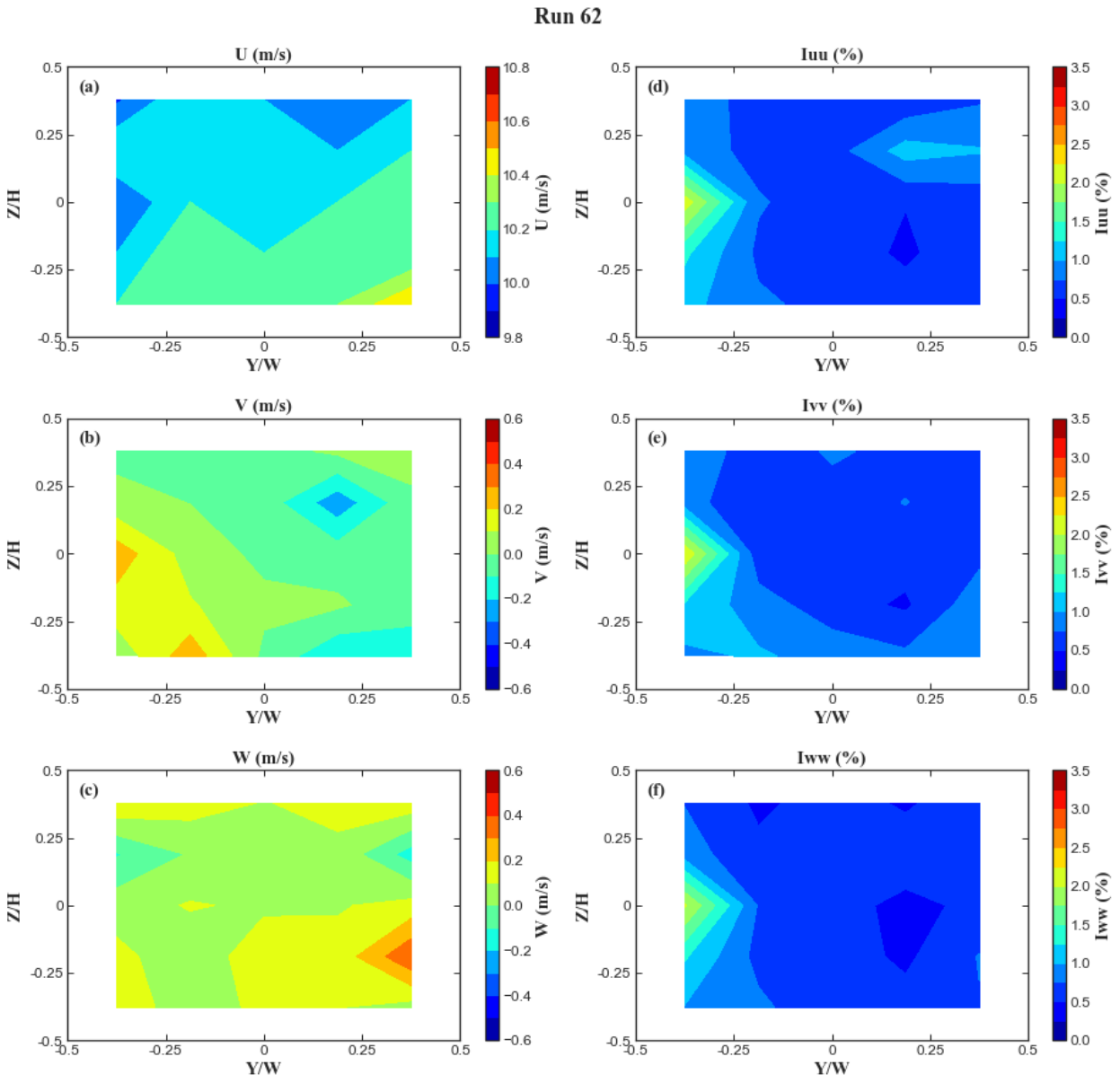


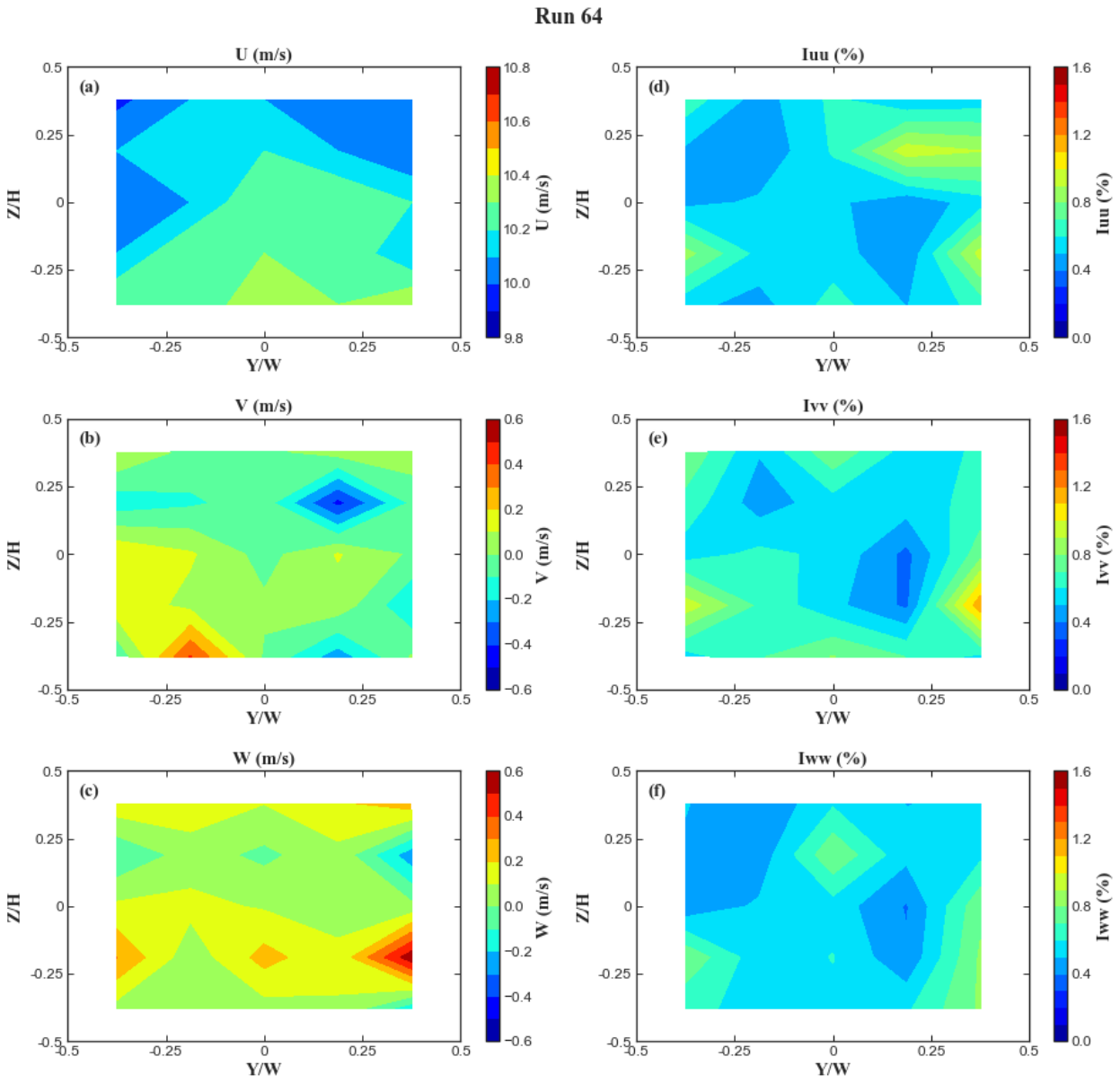

Run 58
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

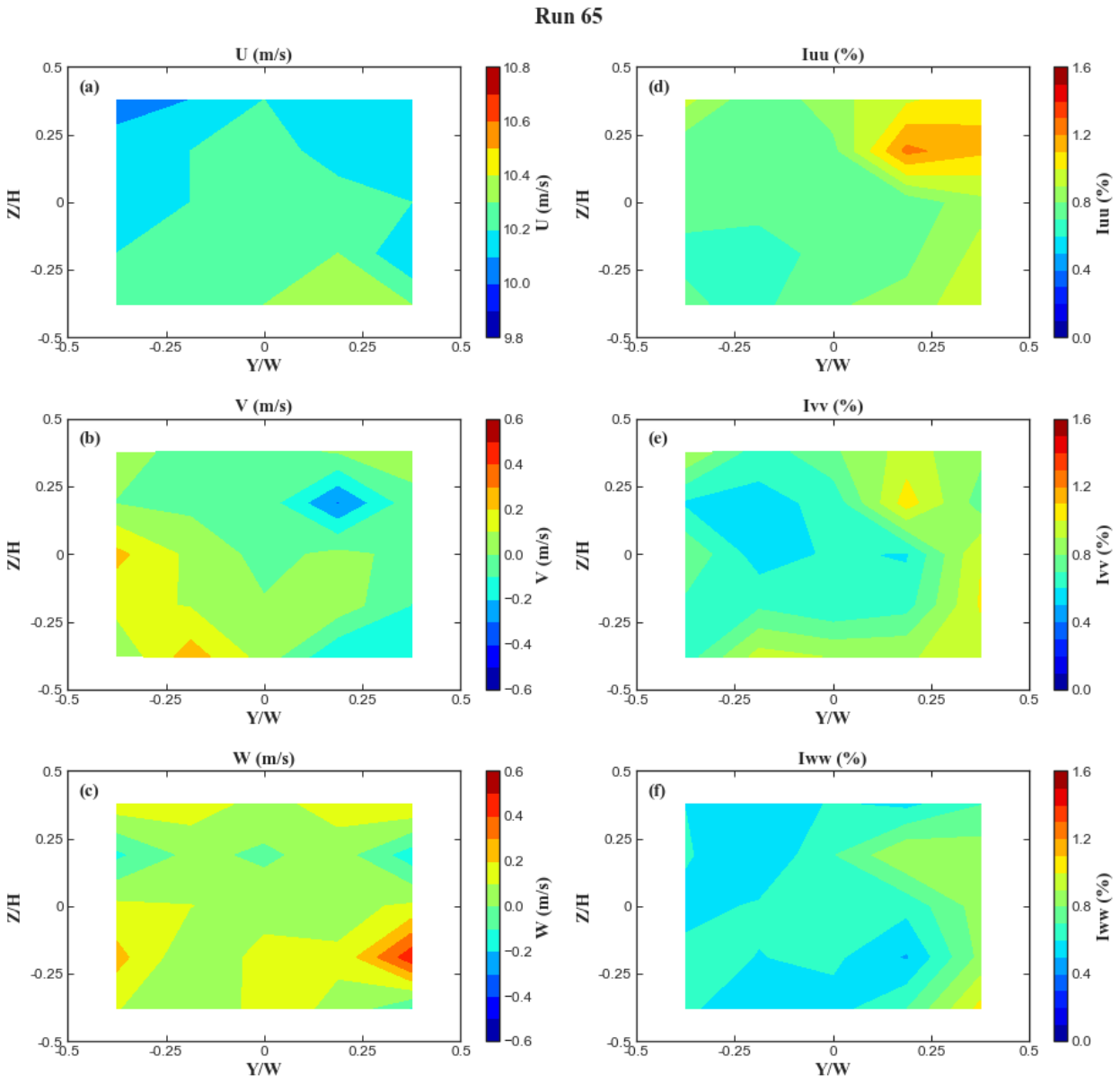

Run 59
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

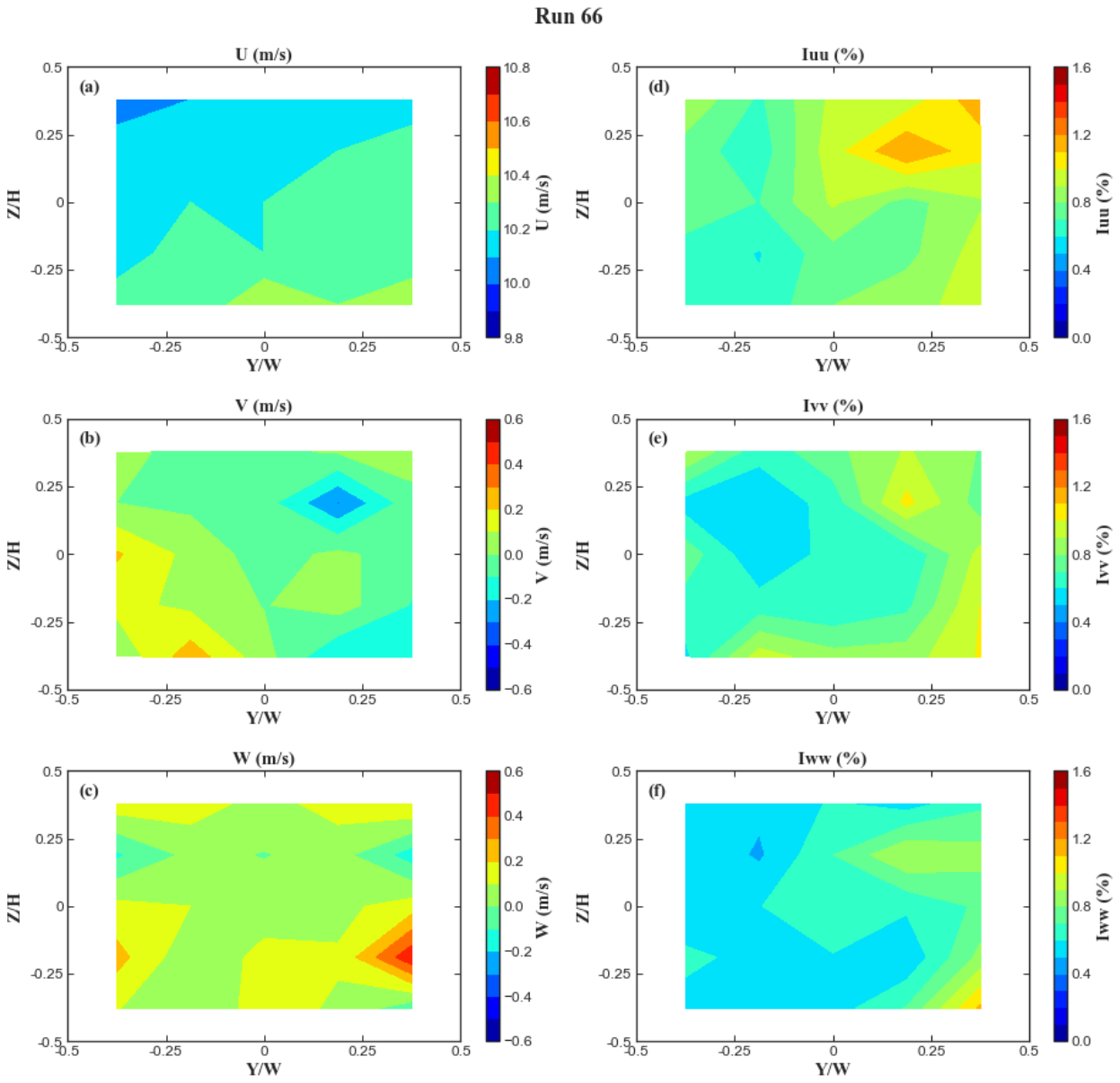

Run 60
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

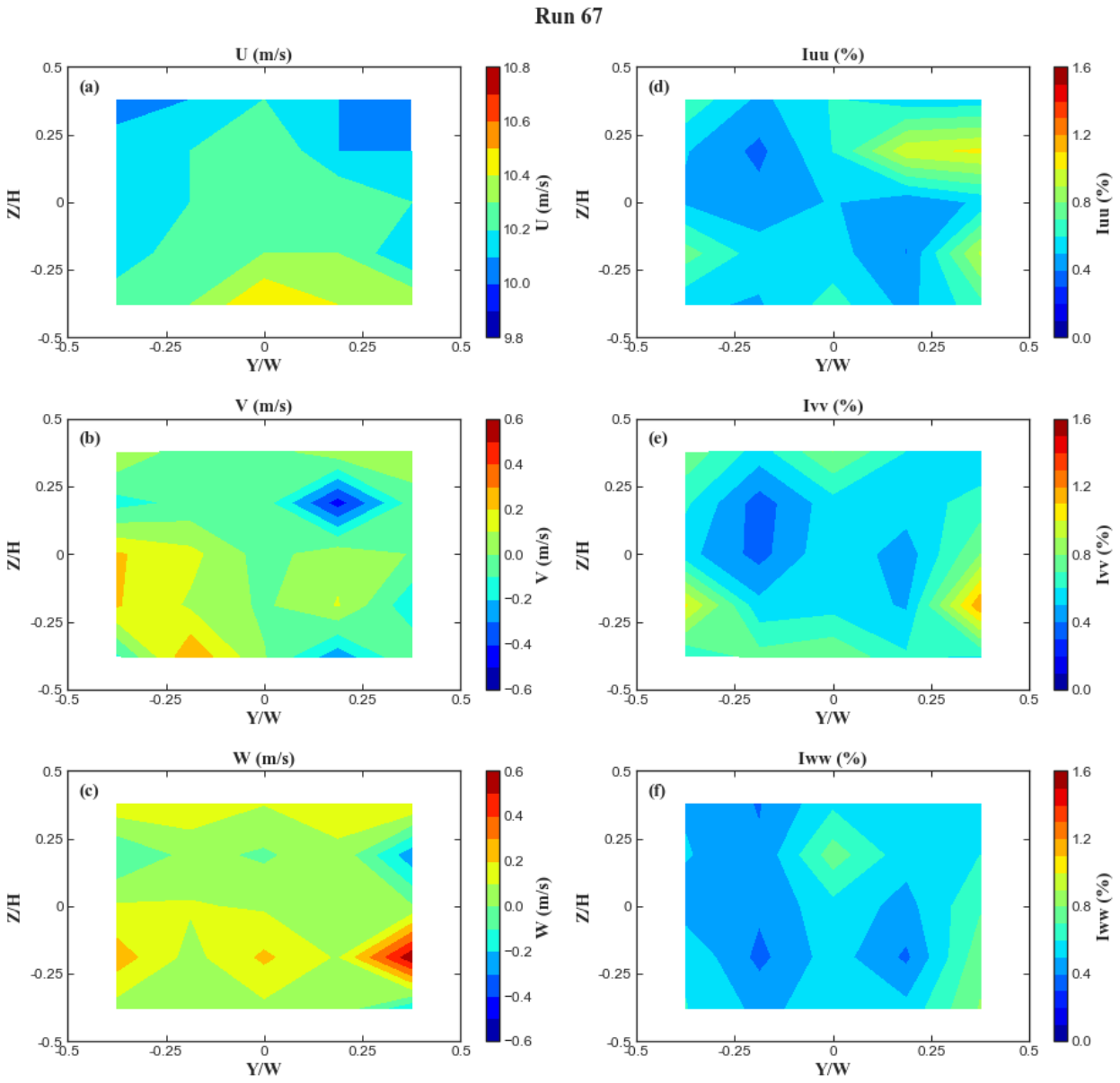

Run 61
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

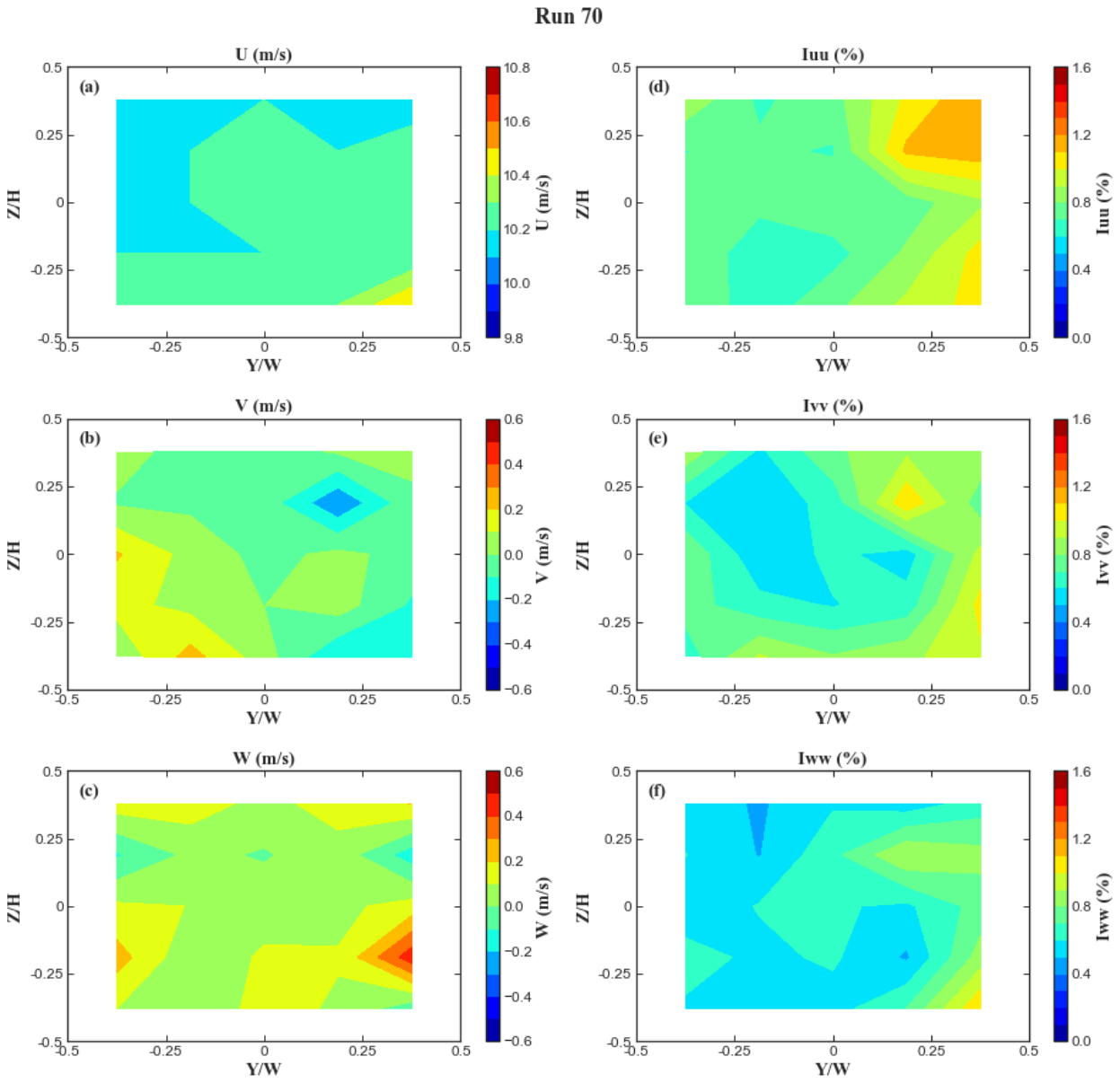

Run 62
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

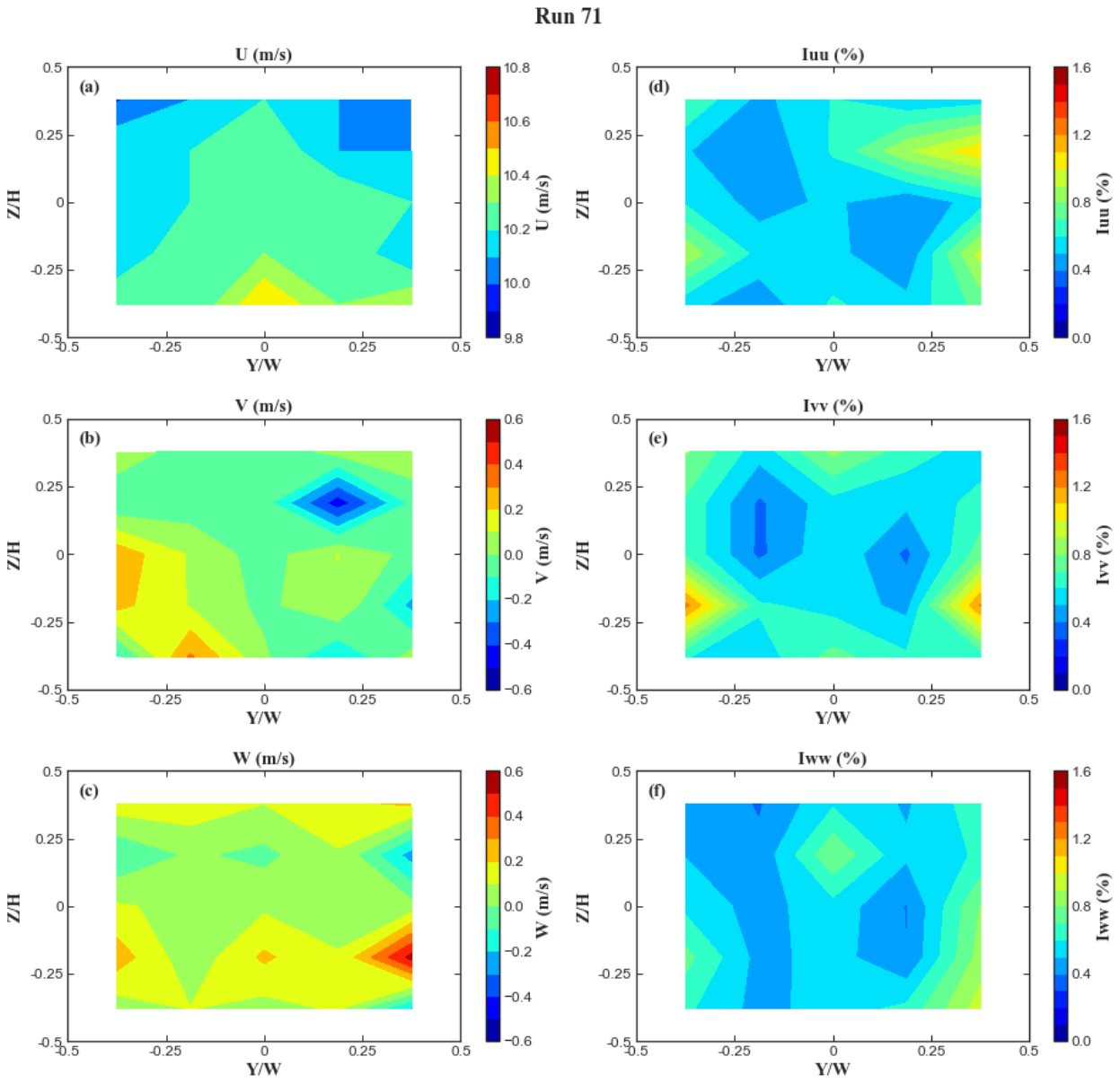

Run 64
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

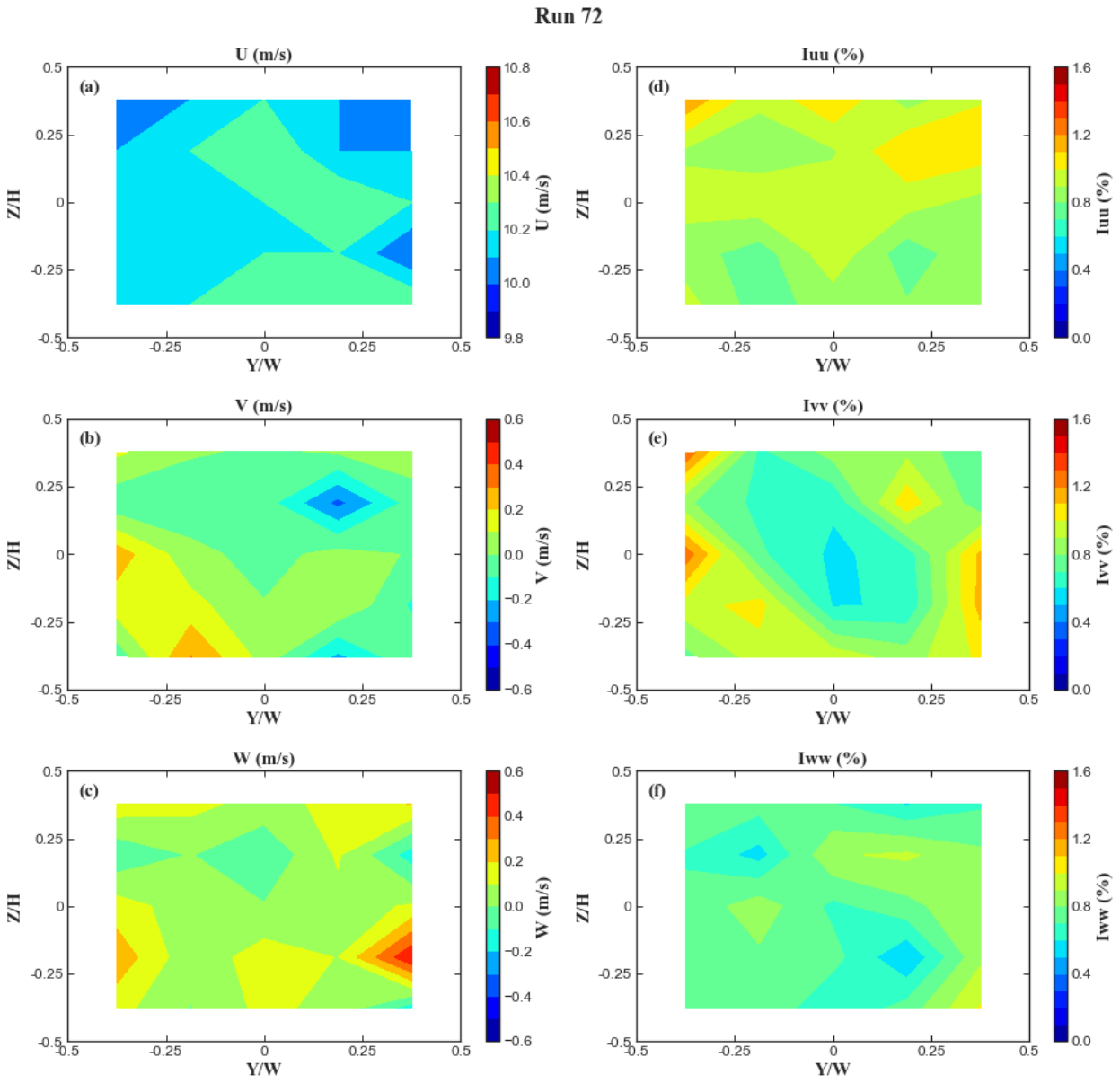

Run 65
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

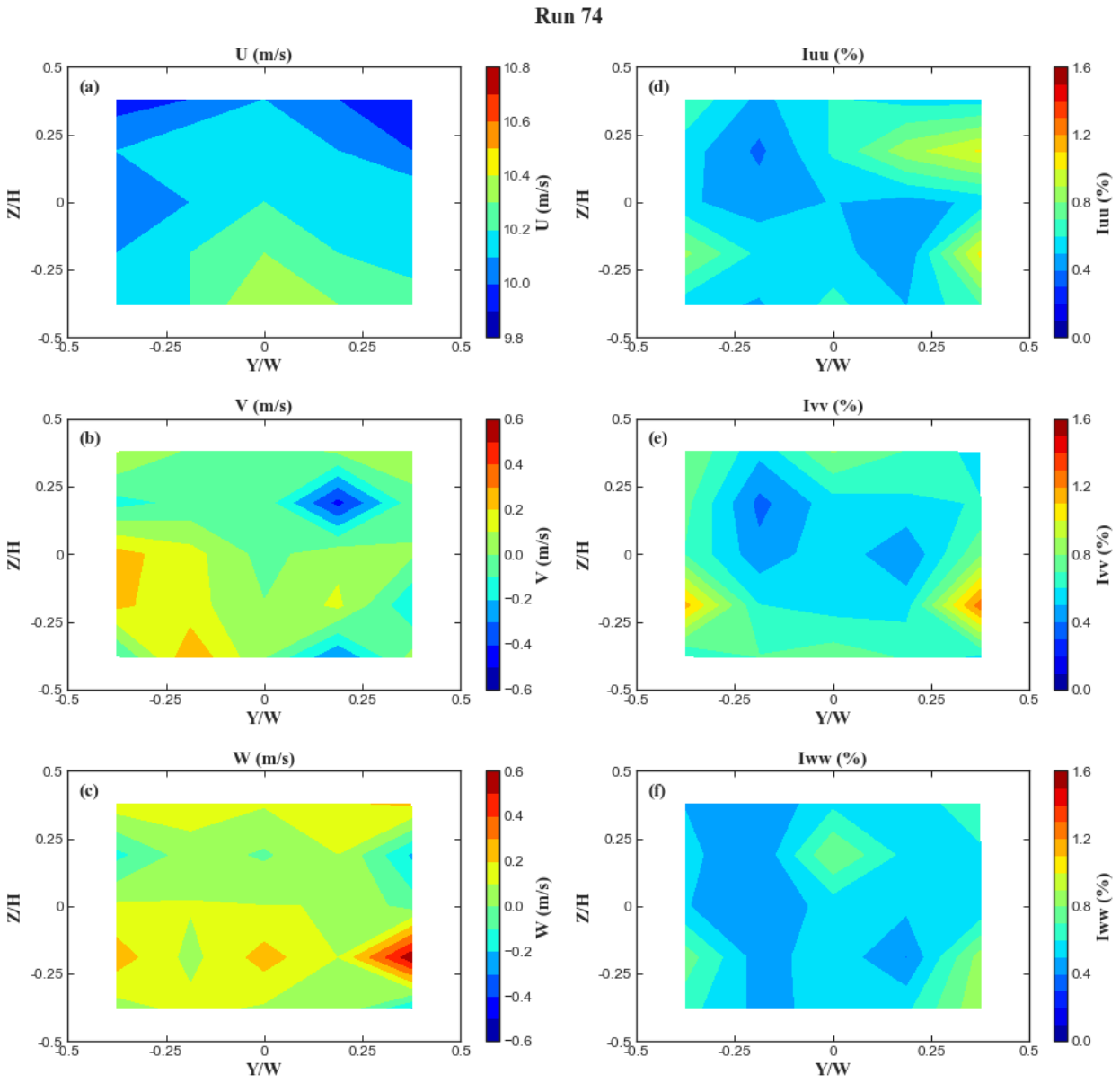

Run 66
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

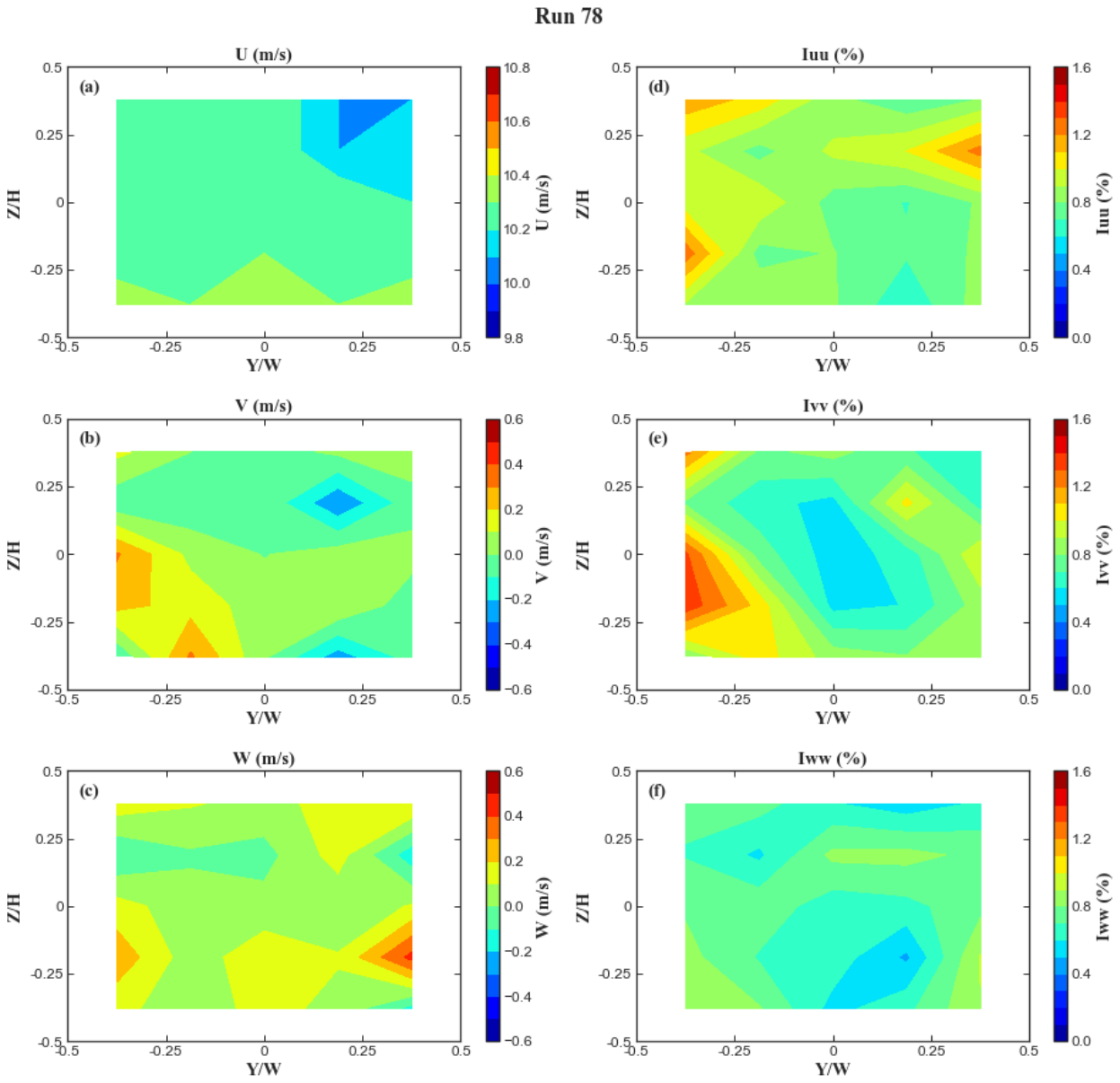

Run 67
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

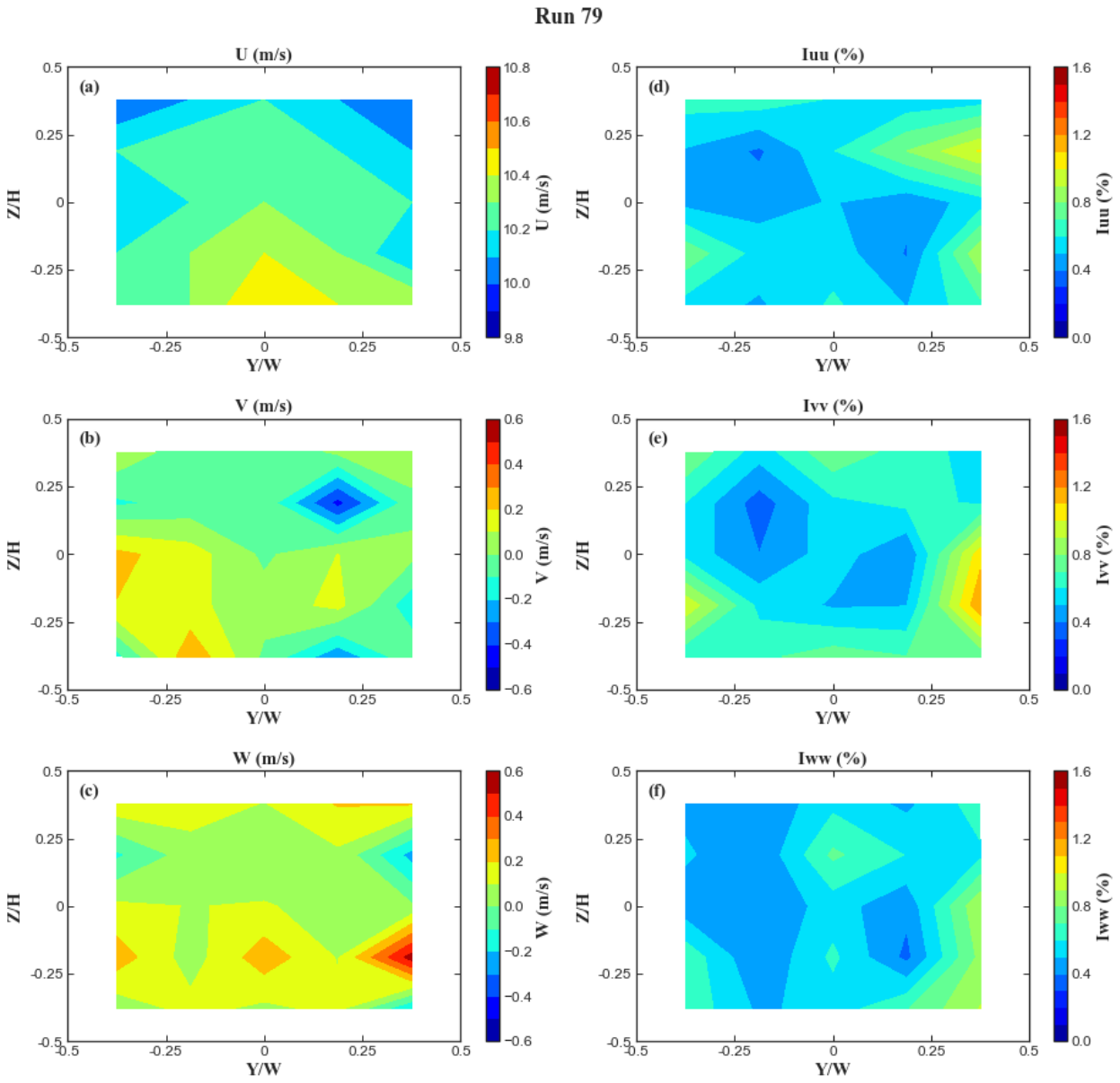

Run 70
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

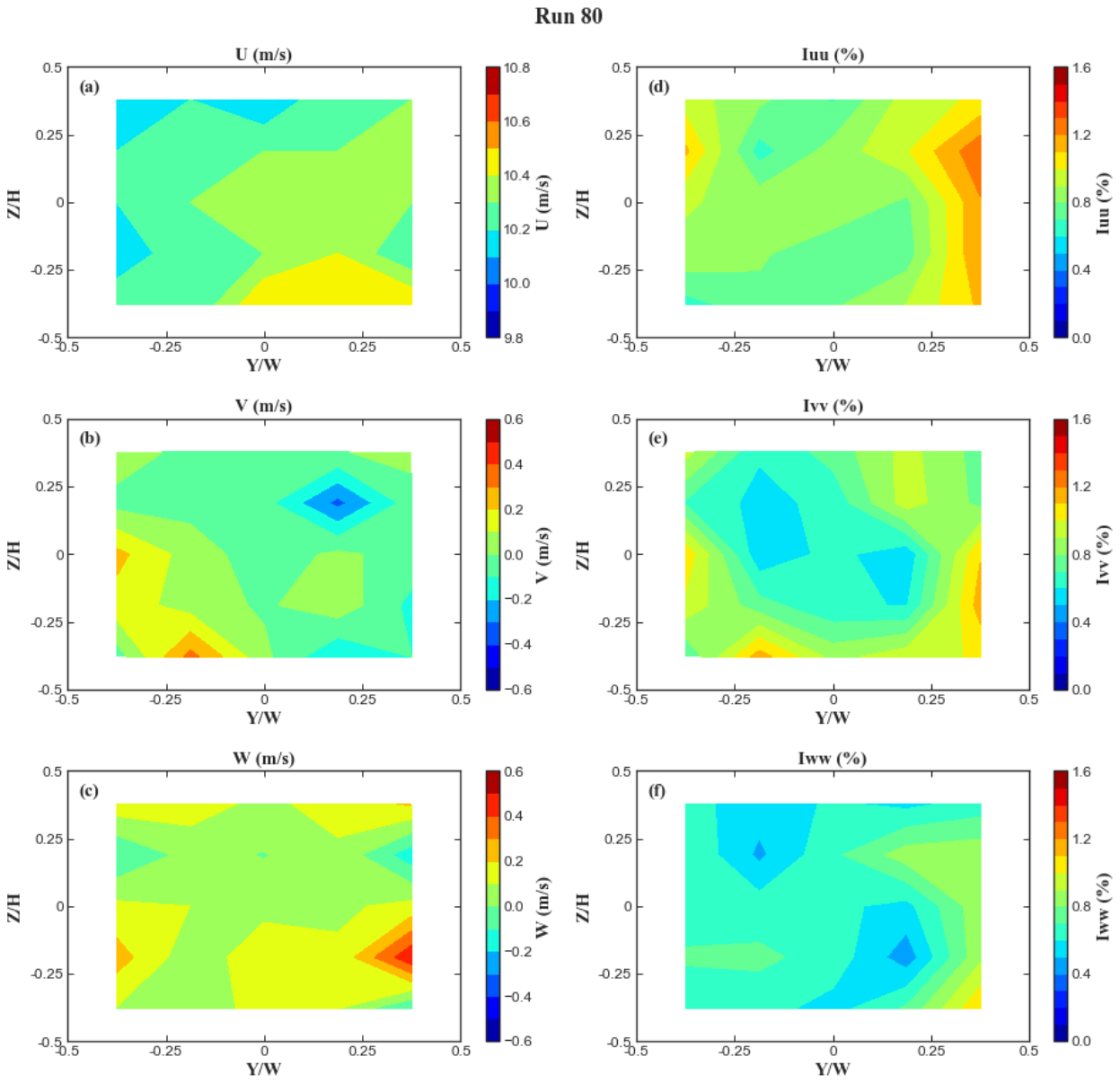

Run 71
U (m/s)
(a)
V (m/s)
(b)
W (m/s)
(c)
Iuu (%)
(d)
Ivv (%)
(e)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
V (m/s)
W (m/s)
Iuu (%)
Ivv (%)
Iww (%)

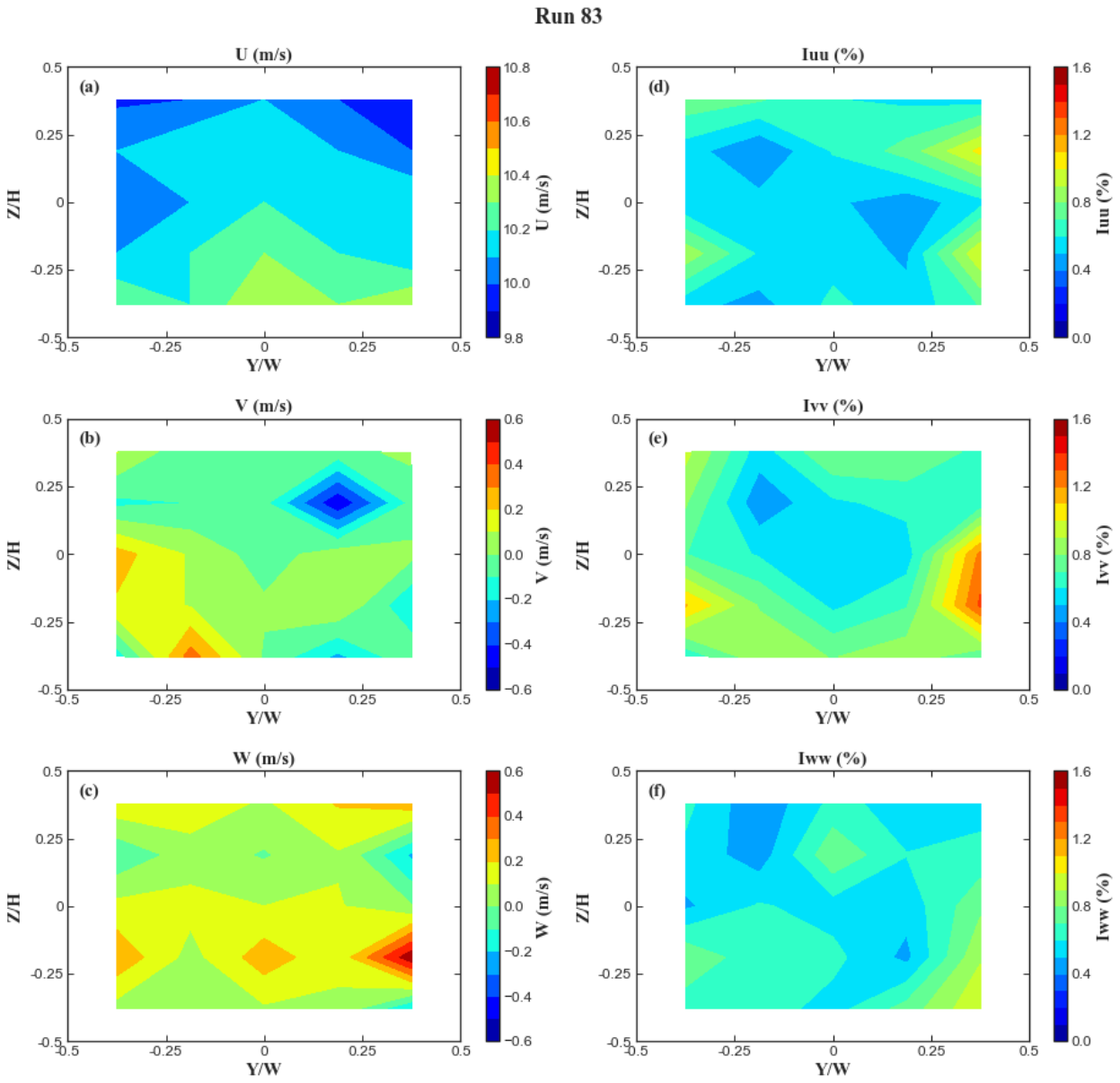

Run 72
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

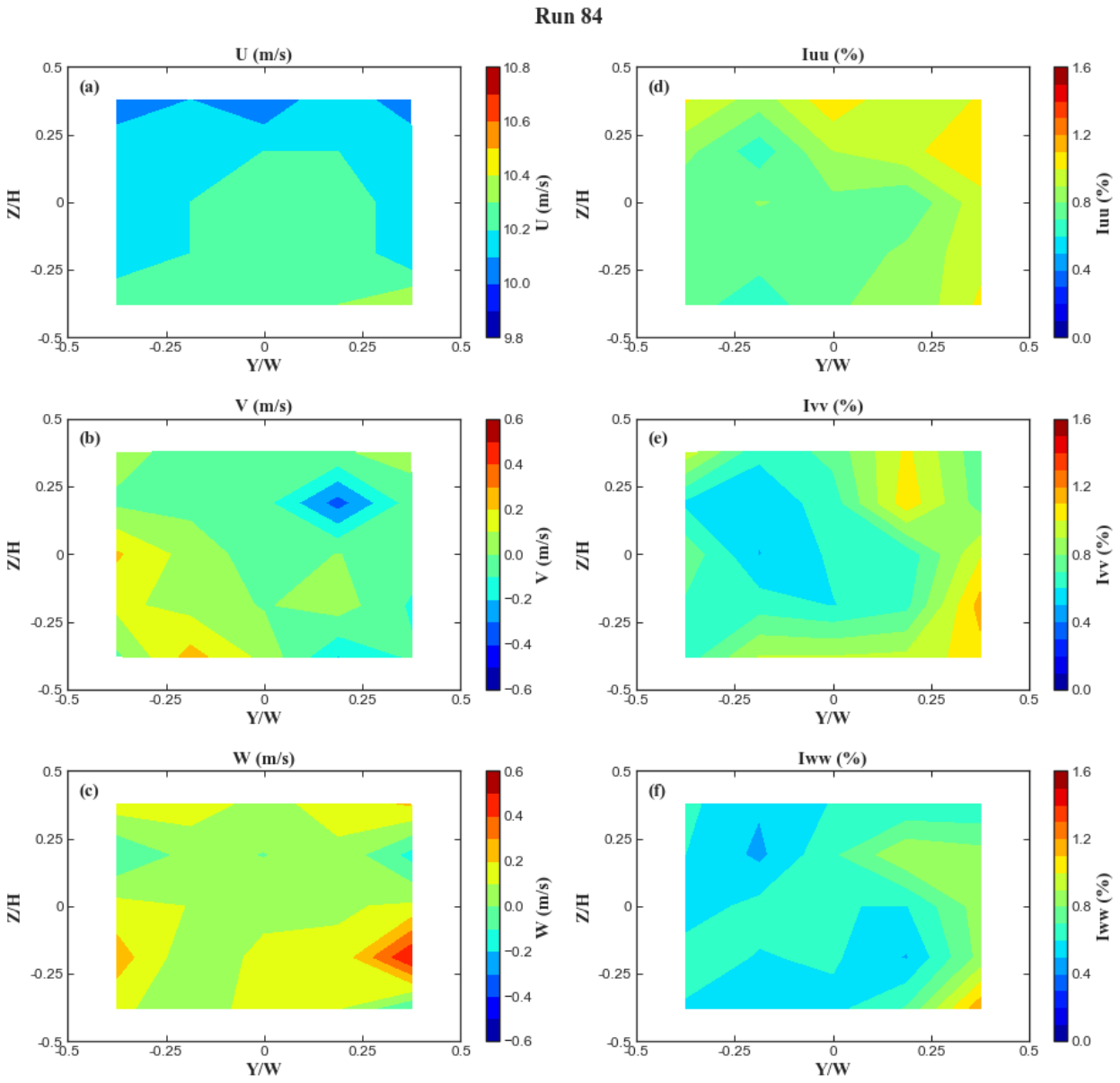

Run 74
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

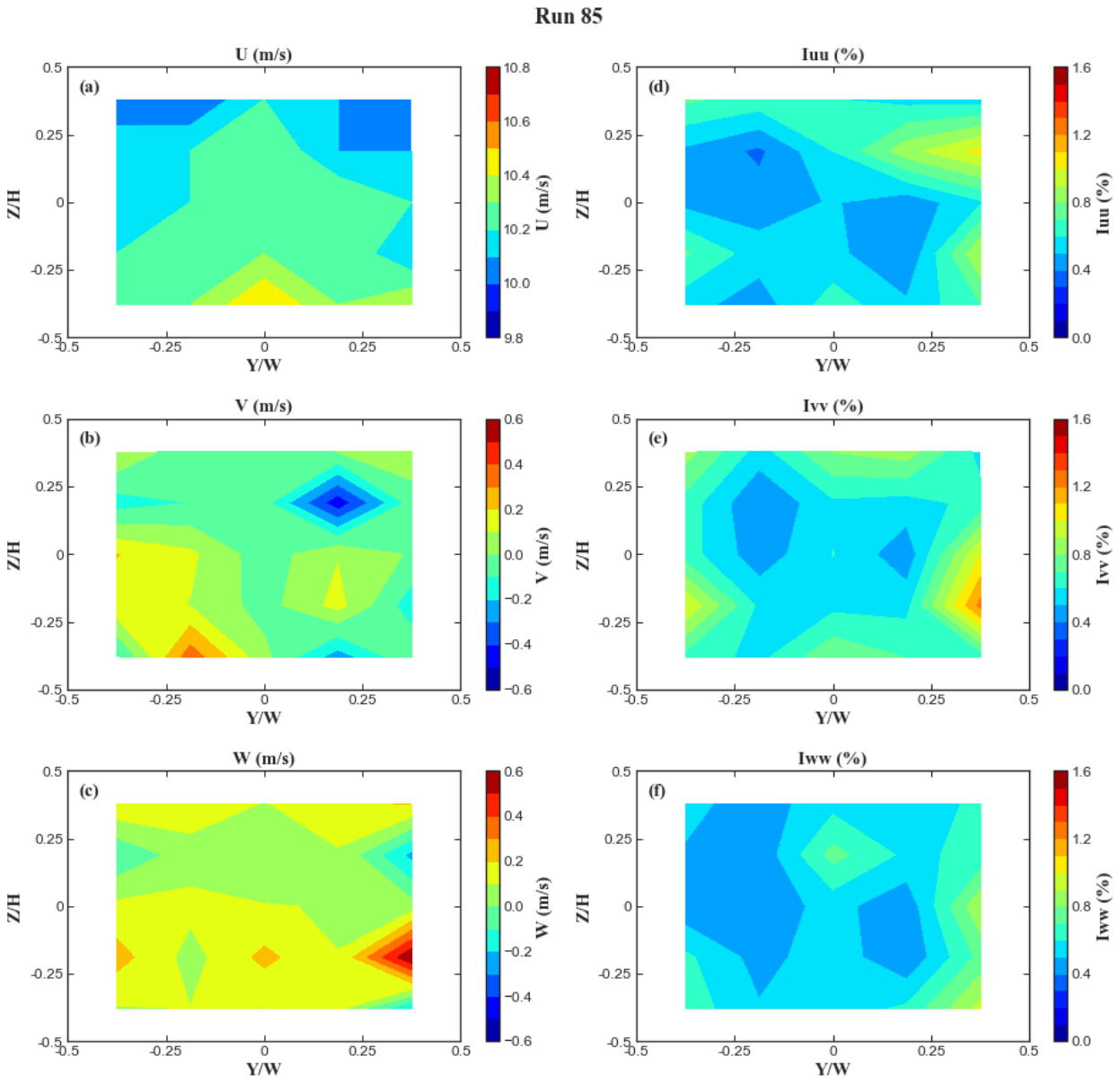

Run 78
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

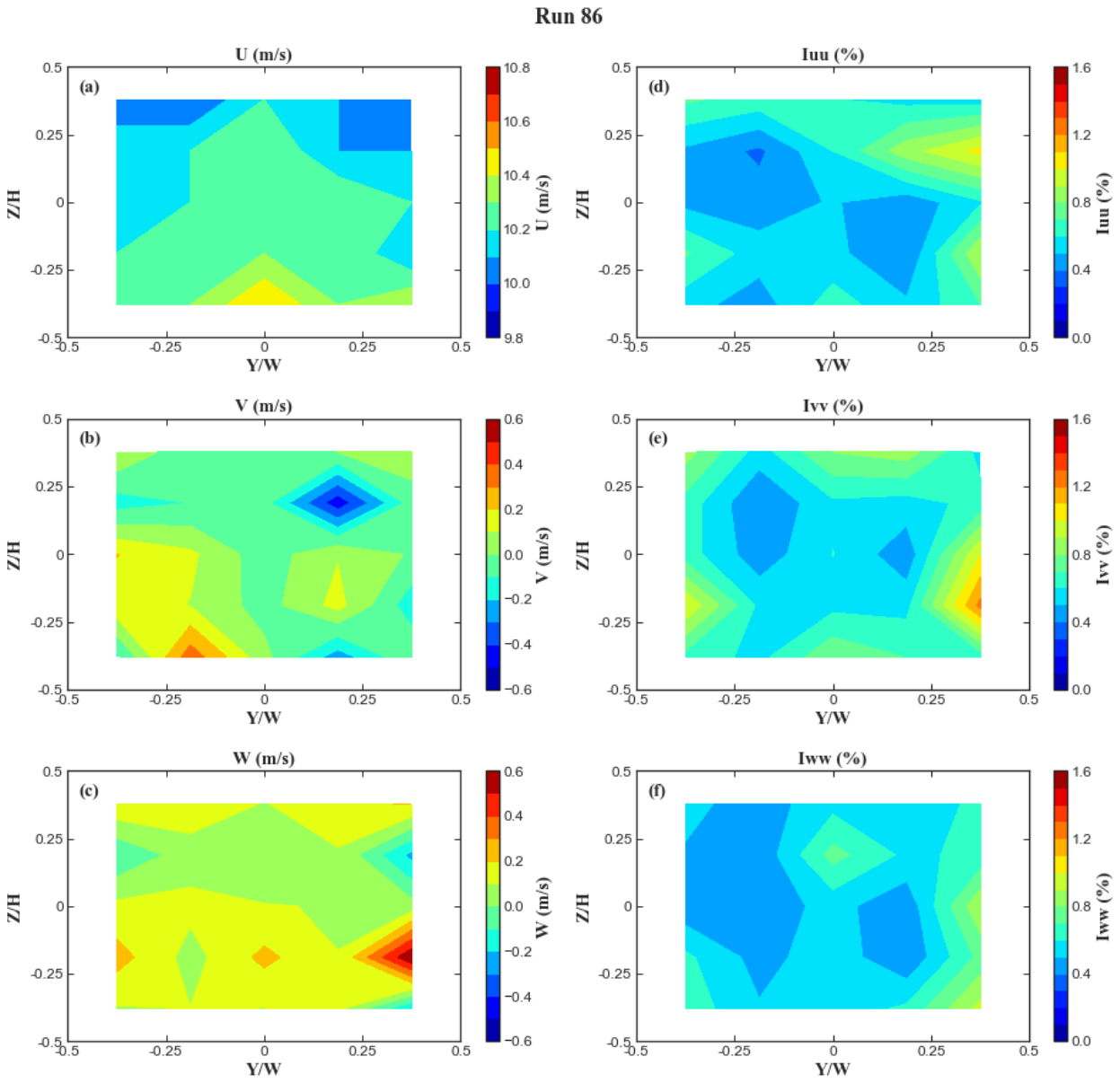

Run 79
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

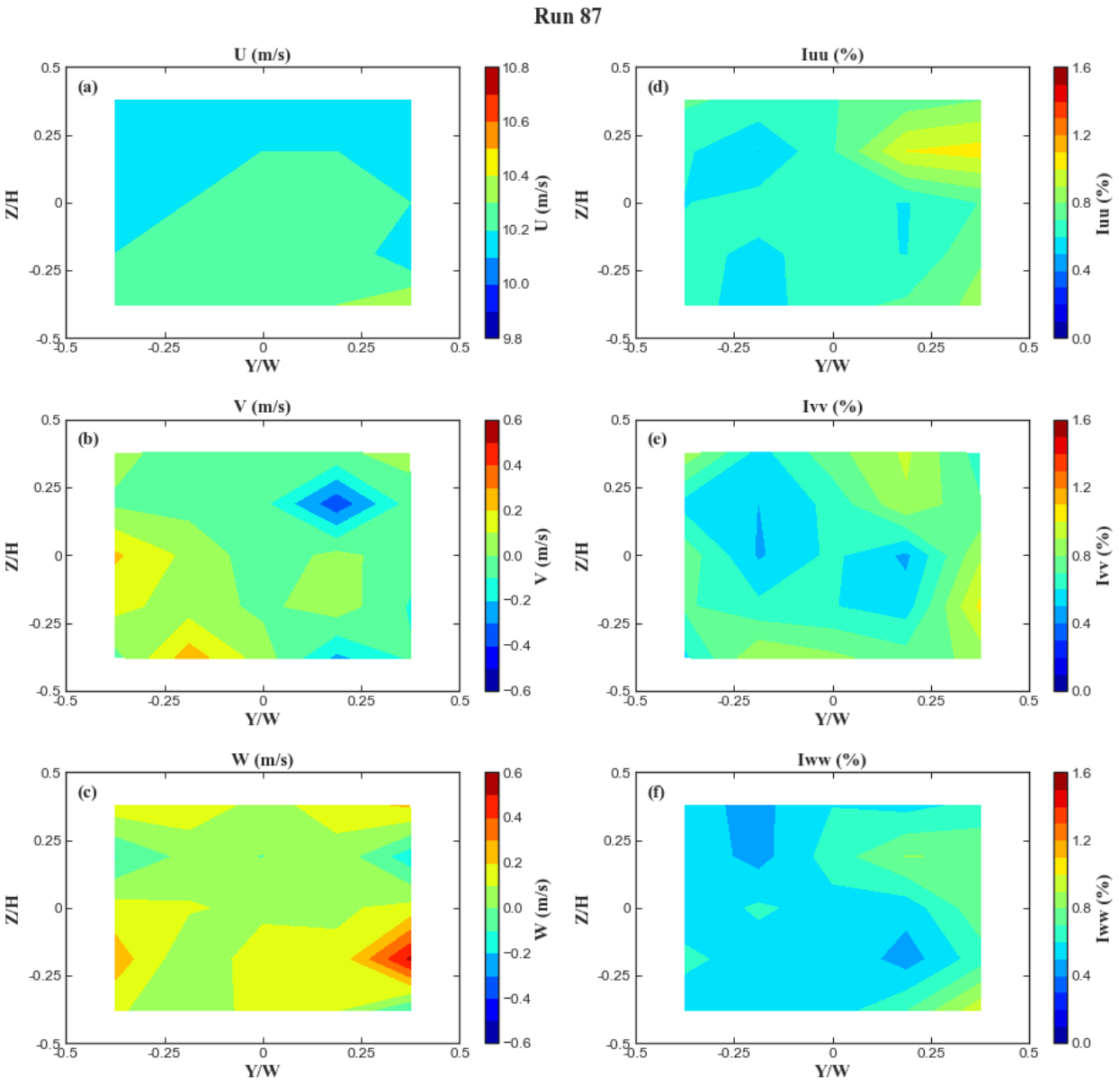

Run 80
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

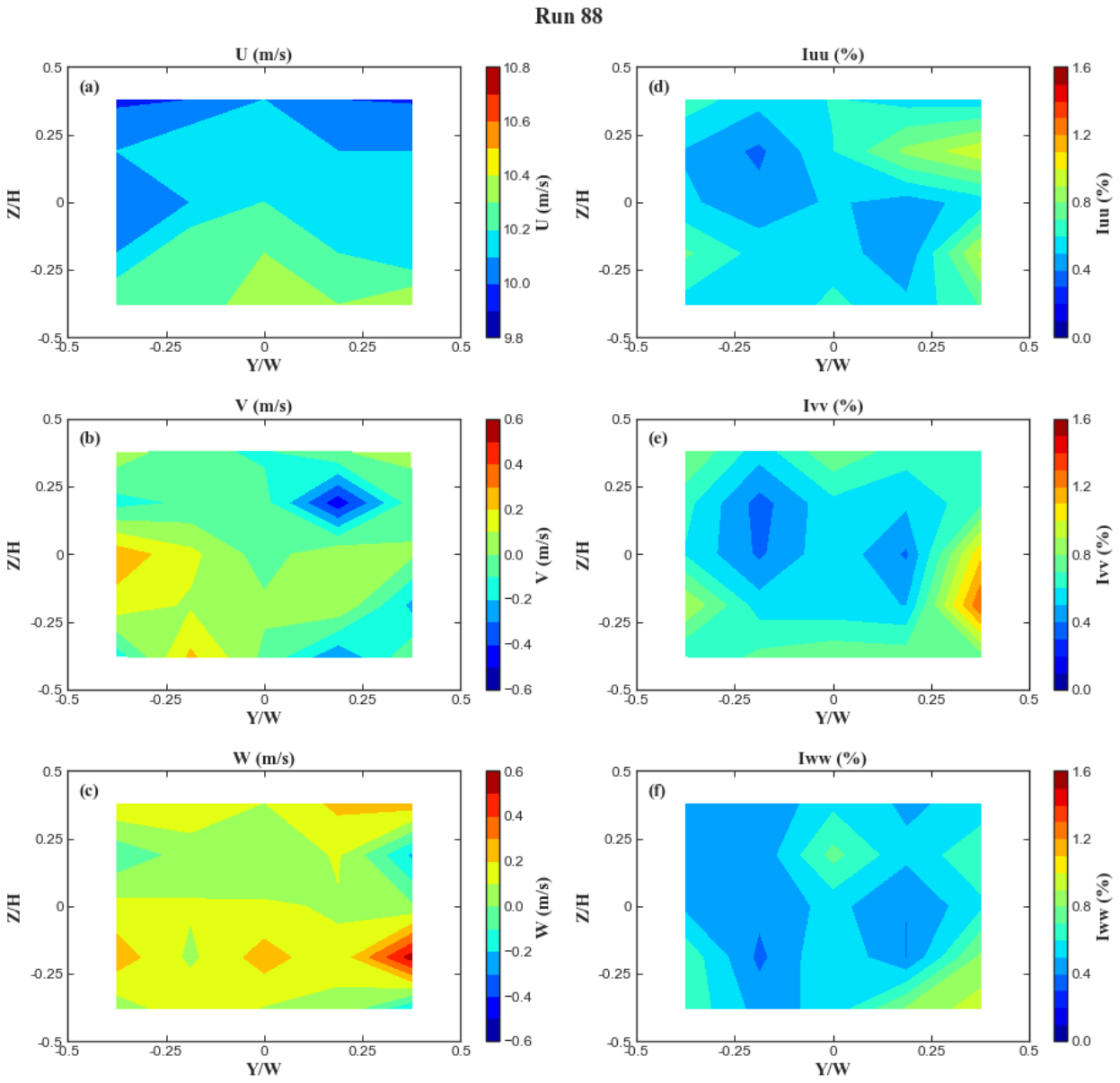

Run 83
U (m/s)
(a)
V (m/s)
(b)
W (m/s)
(c)
Iuu (%)
(d)
Ivv (%)
(e)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
V (m/s)
W (m/s)
Iuu (%)
Ivv (%)
Iww (%)

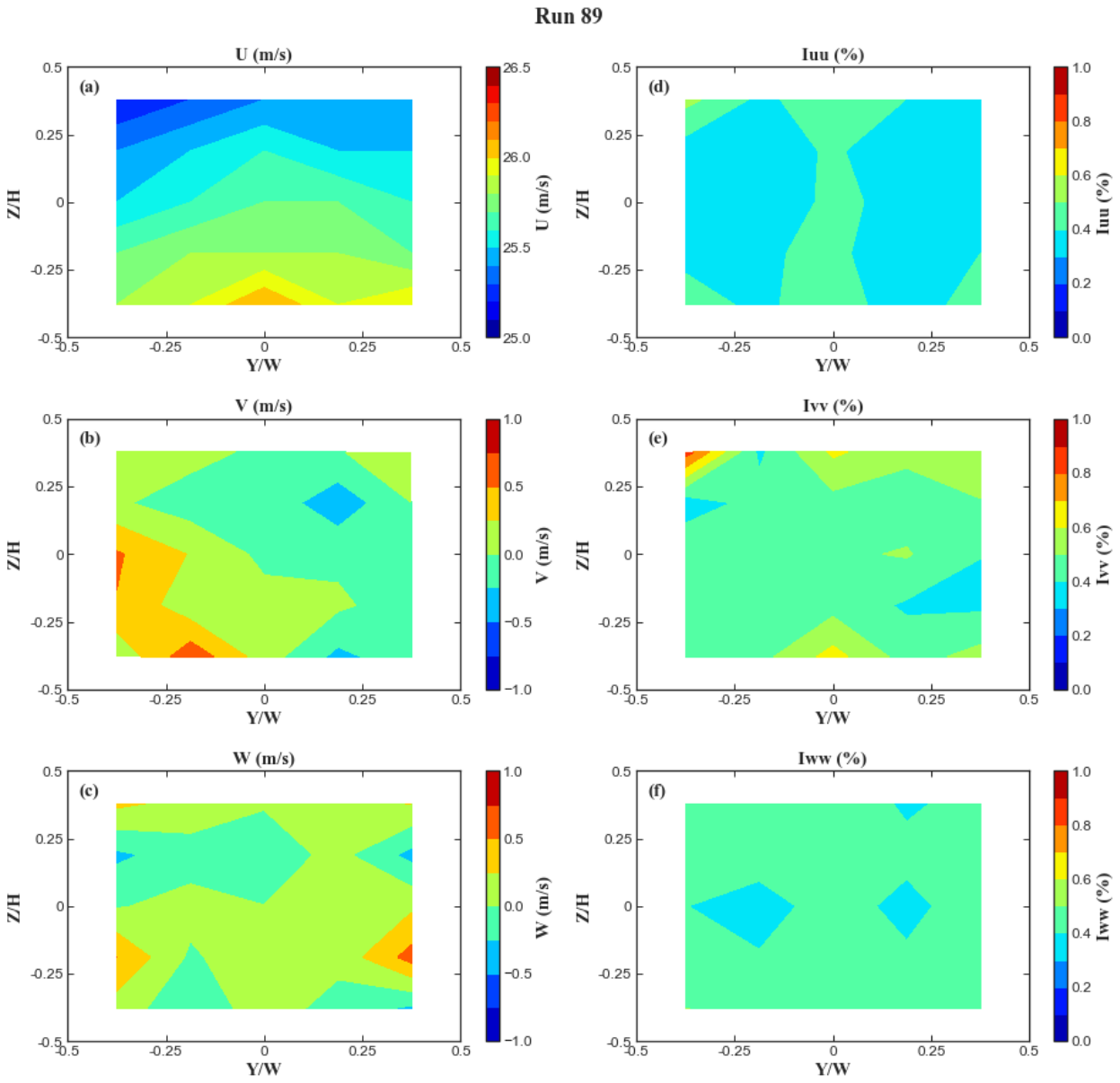

Run 84
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

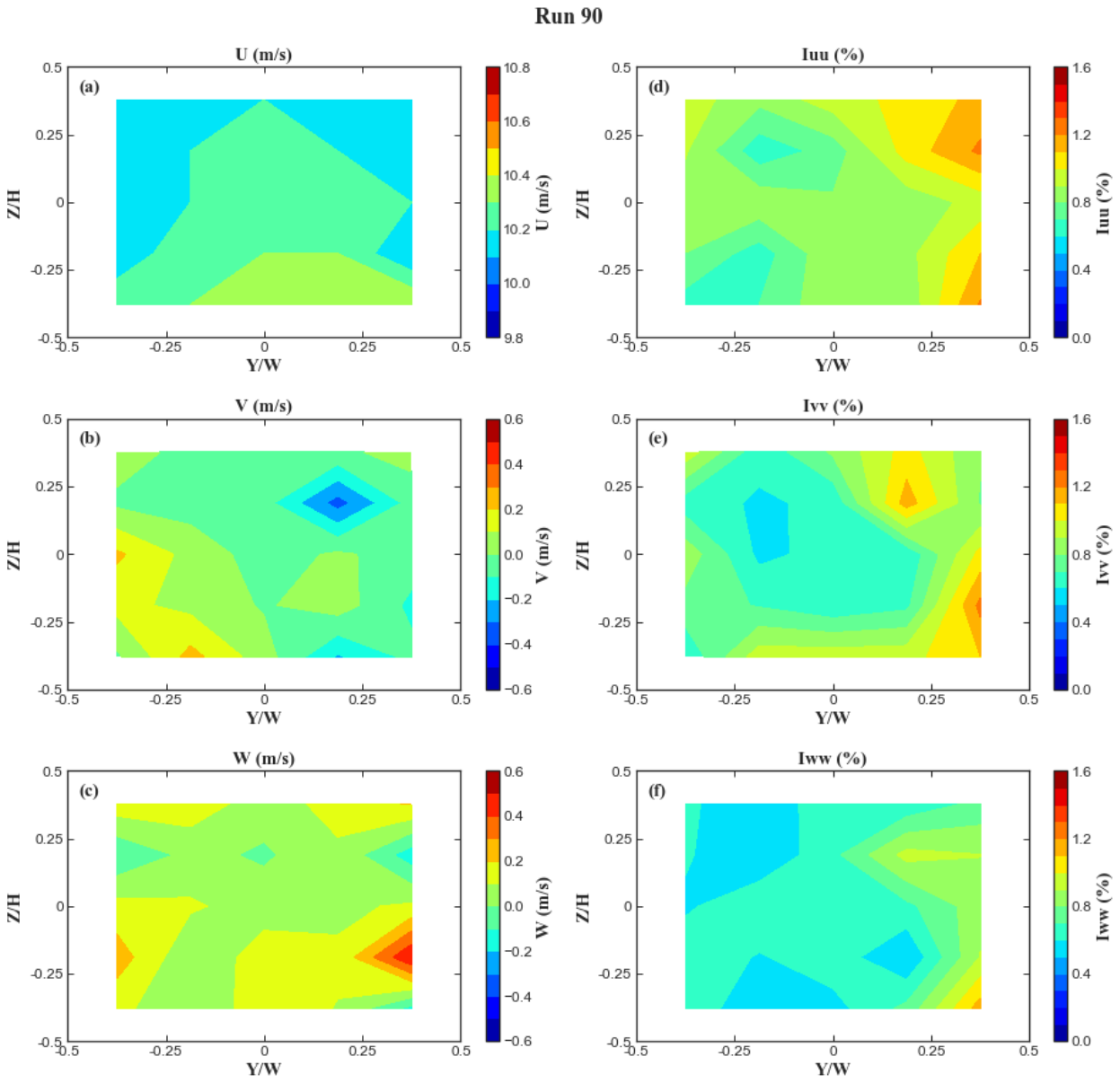

Run 85
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

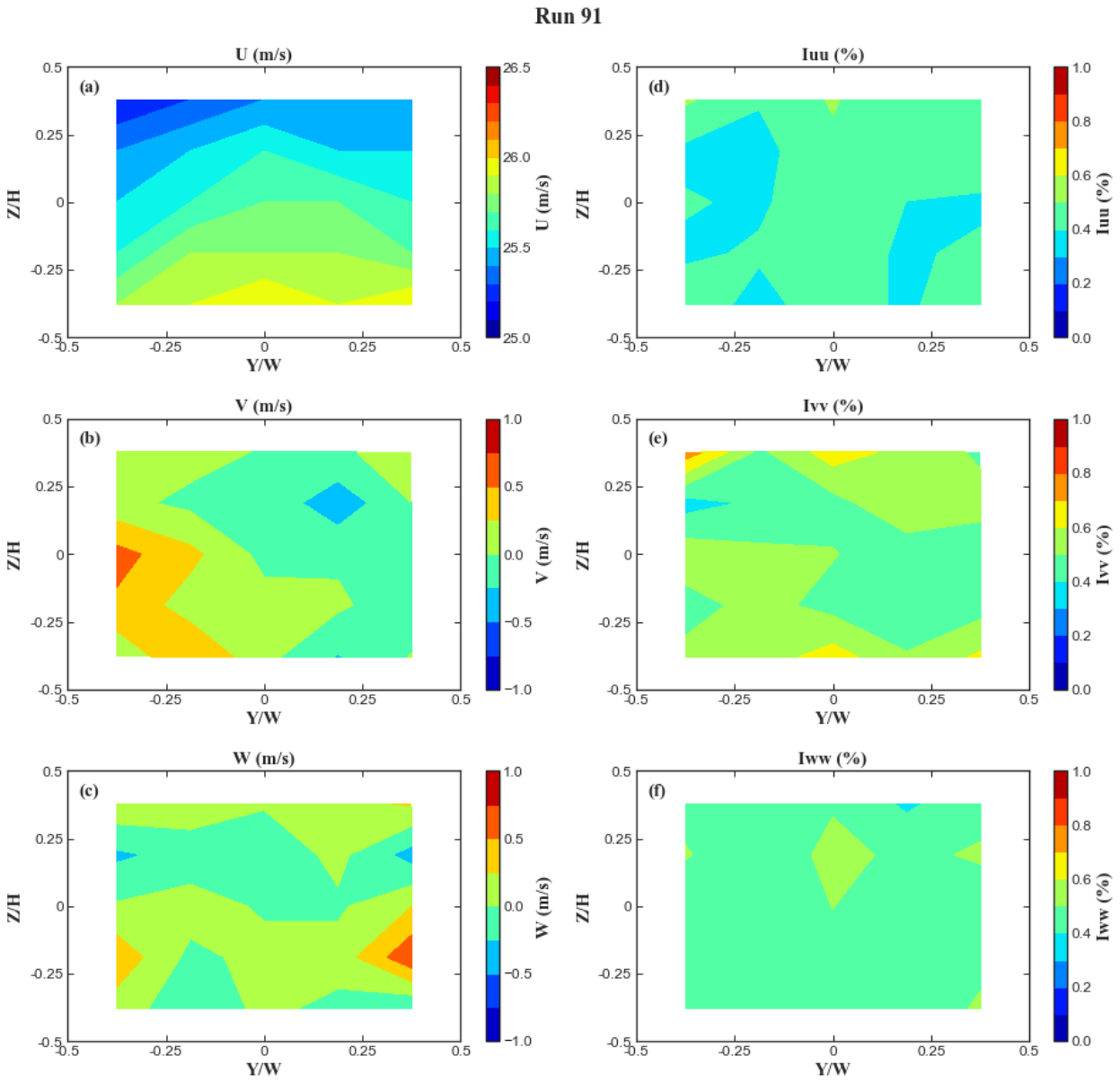

Run 86
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

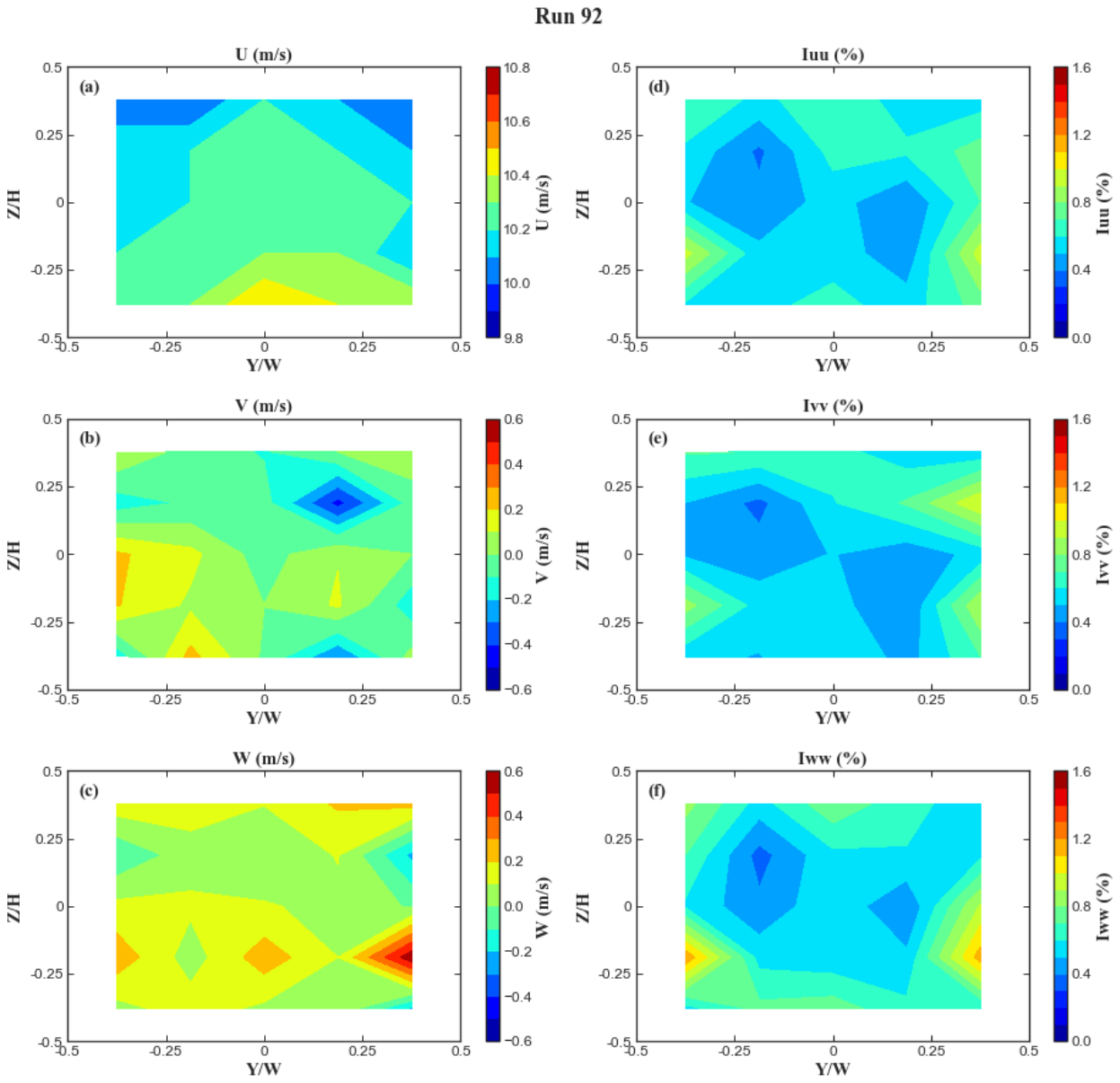

Run 87
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

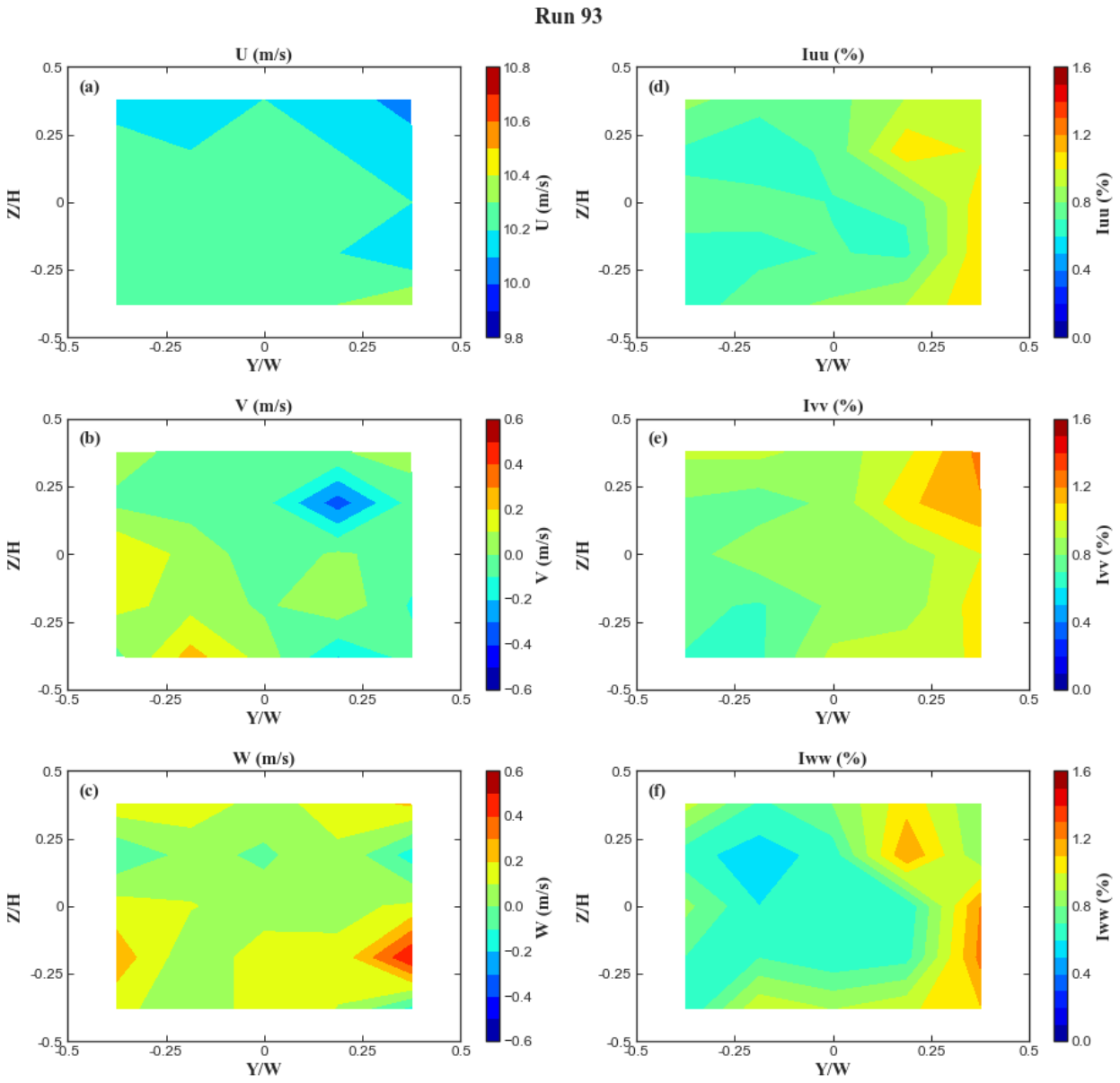

Run 88
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

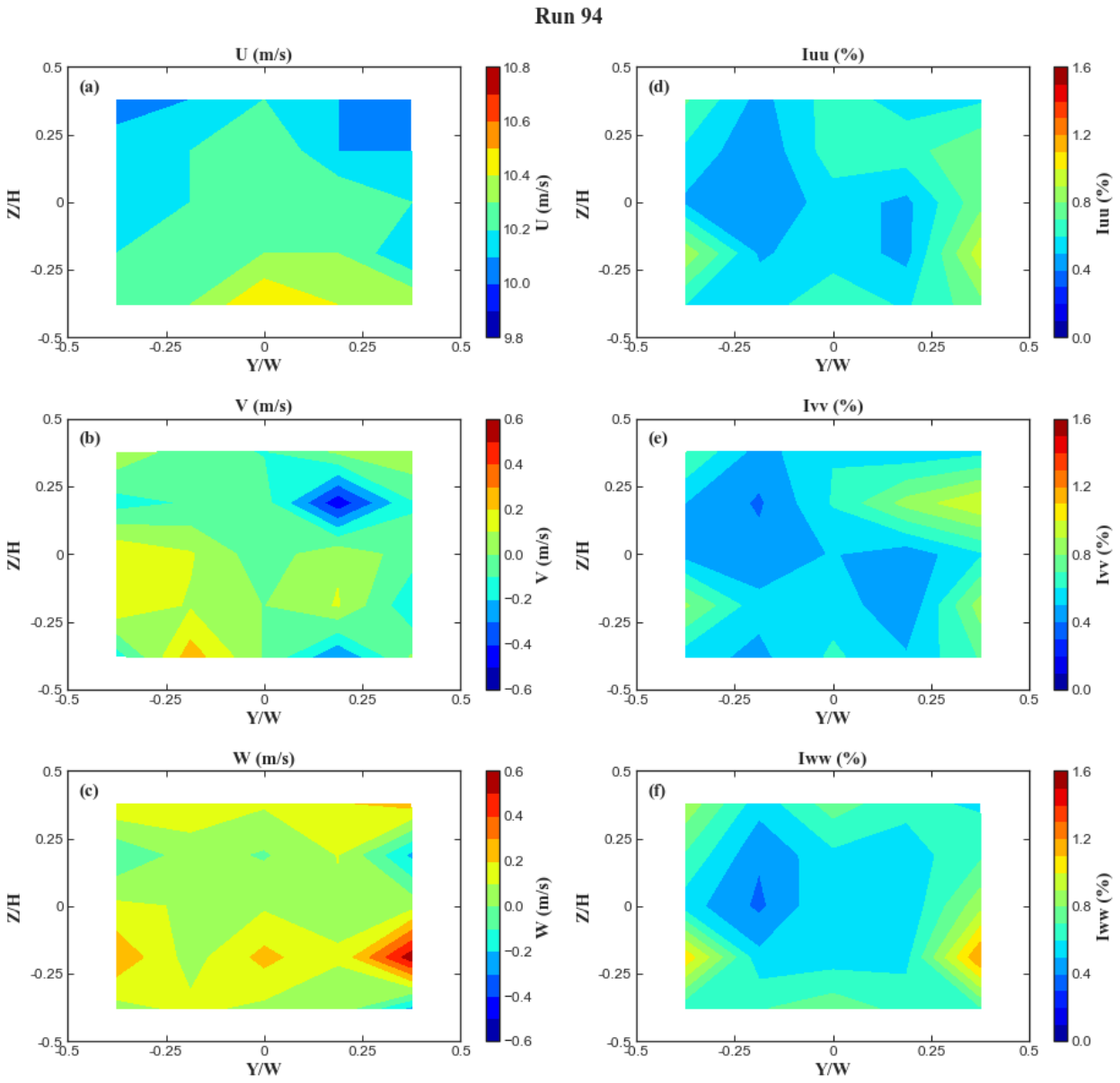

Run 89
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

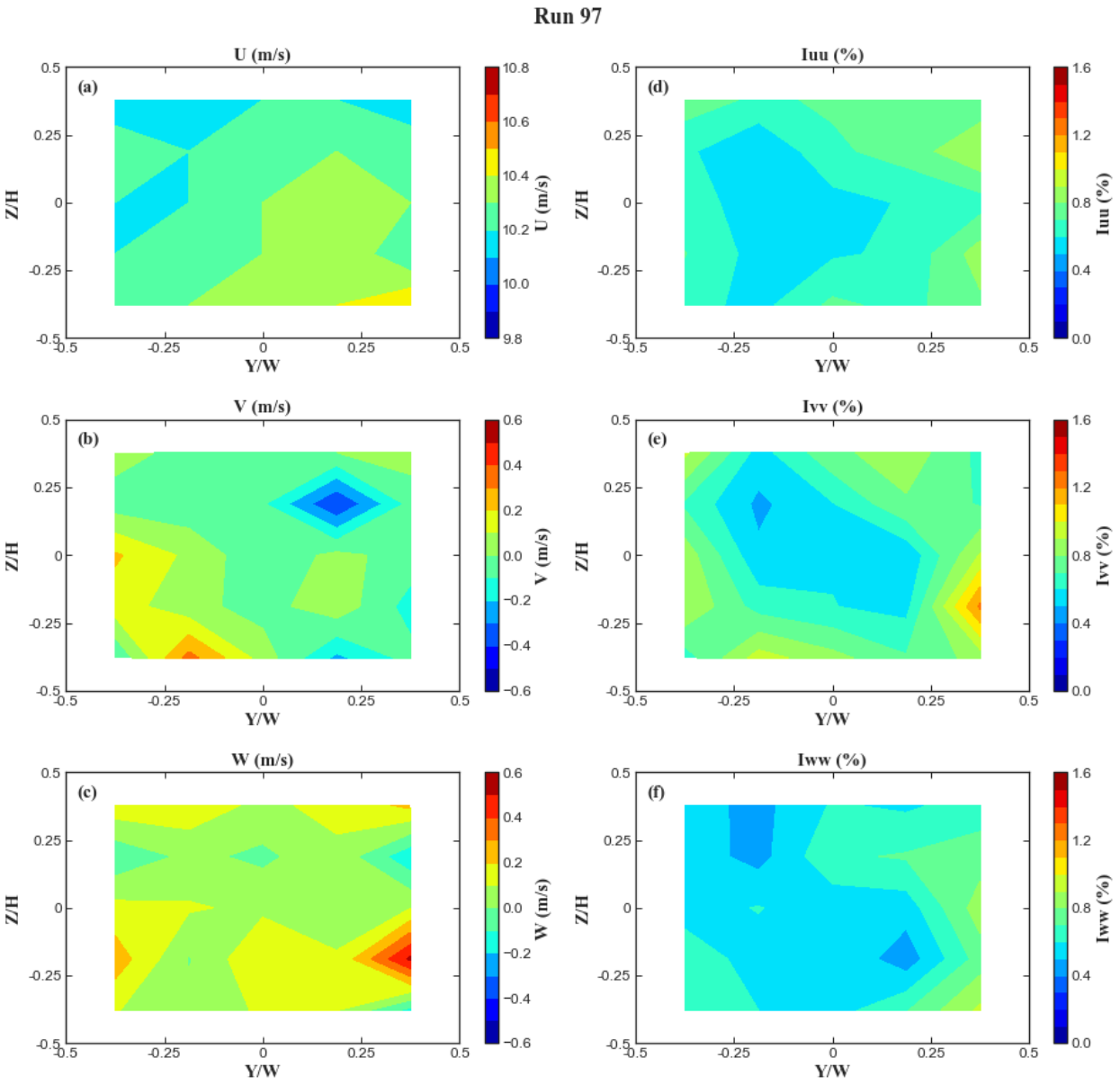

Run 90
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

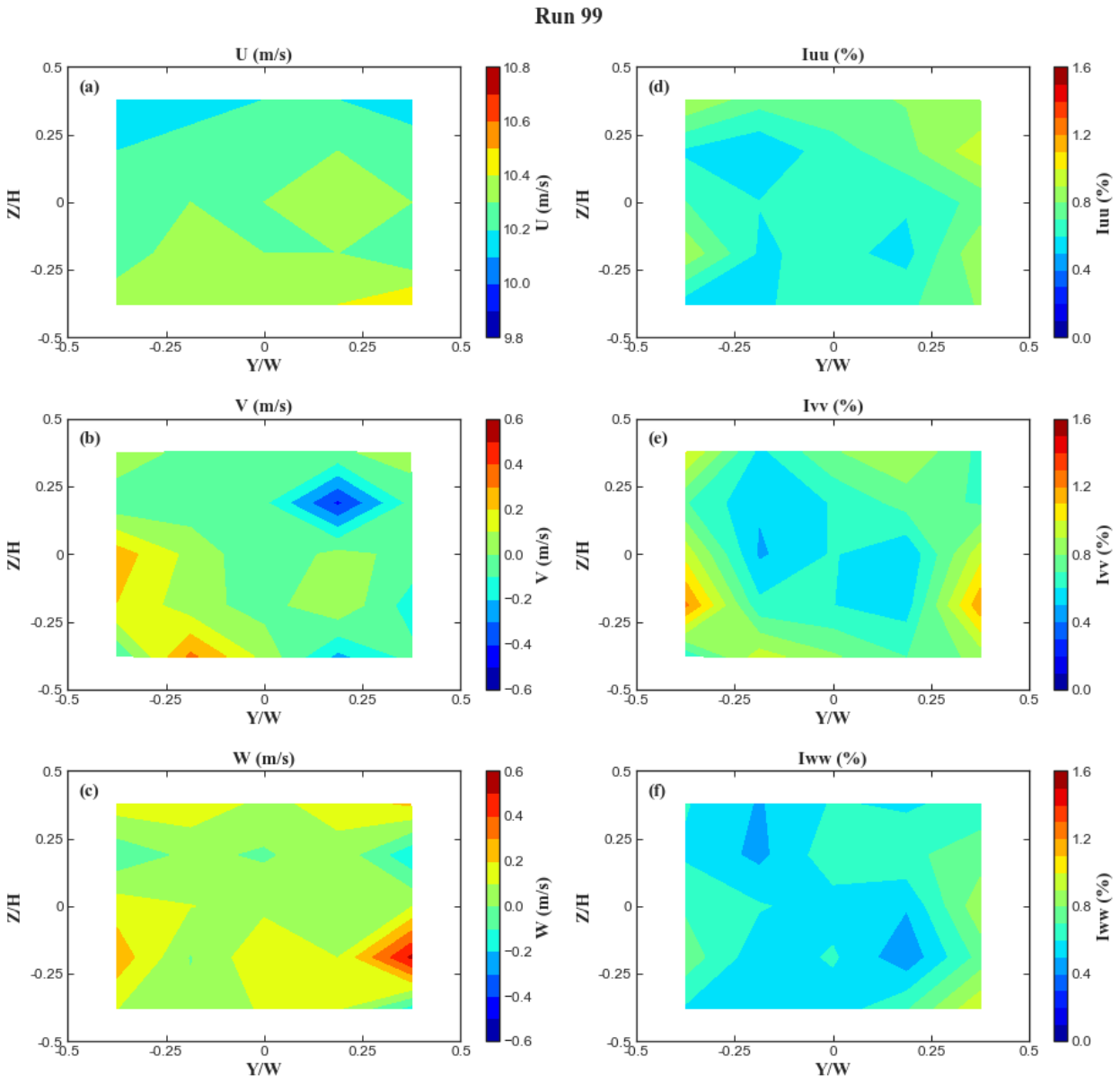

Run 91
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

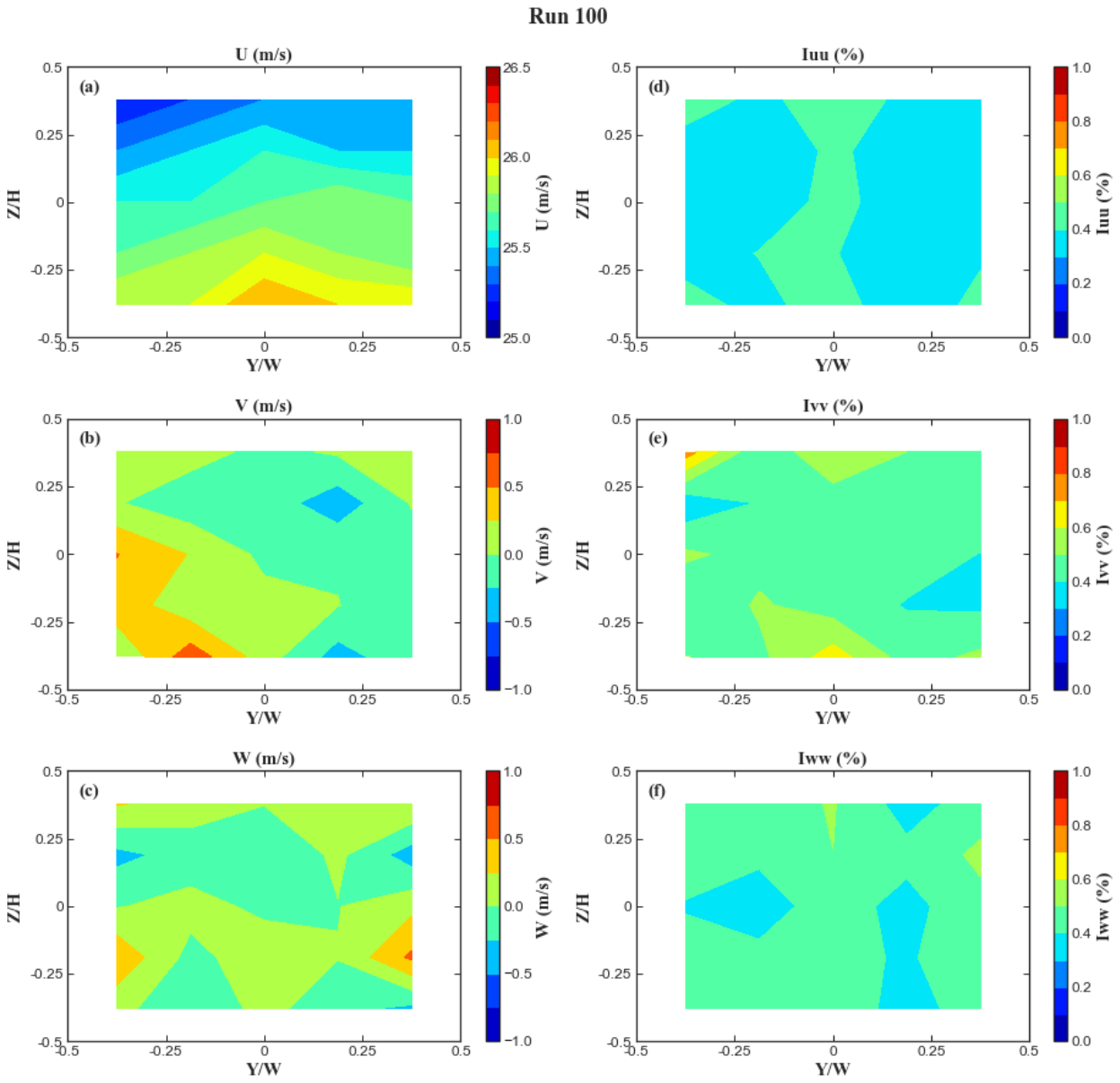

Run 92
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

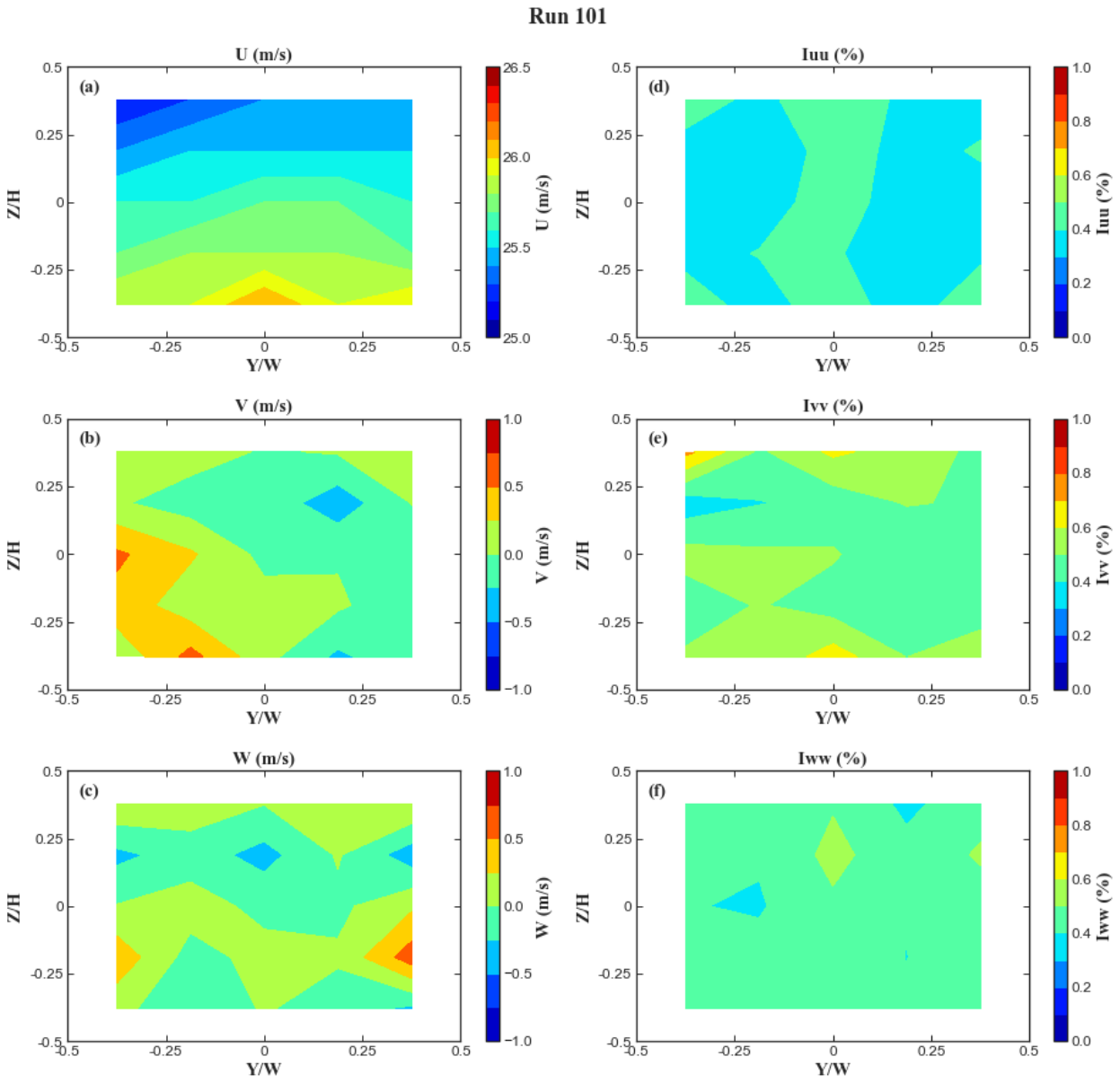

Run 93
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

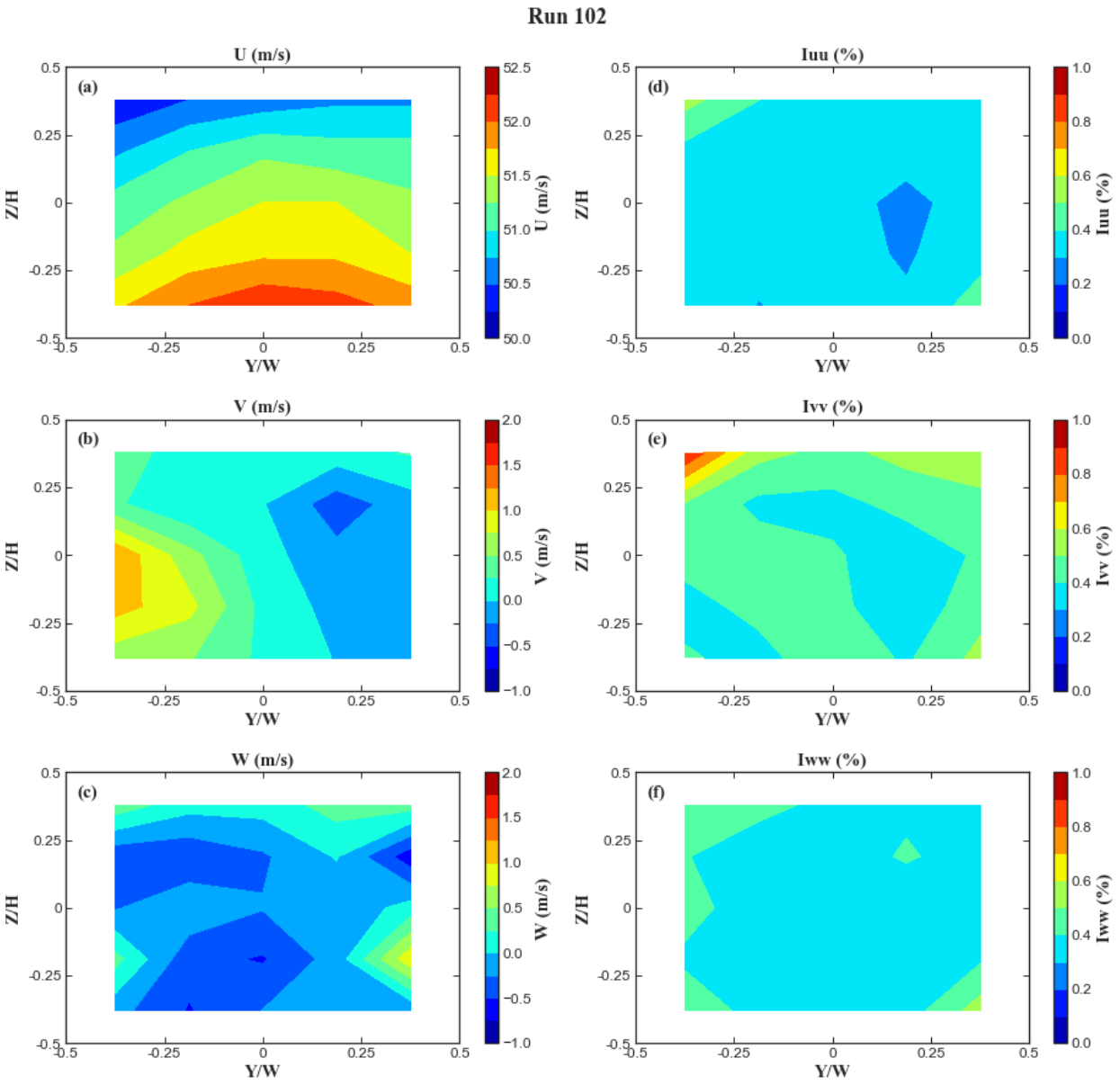

Run 94
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

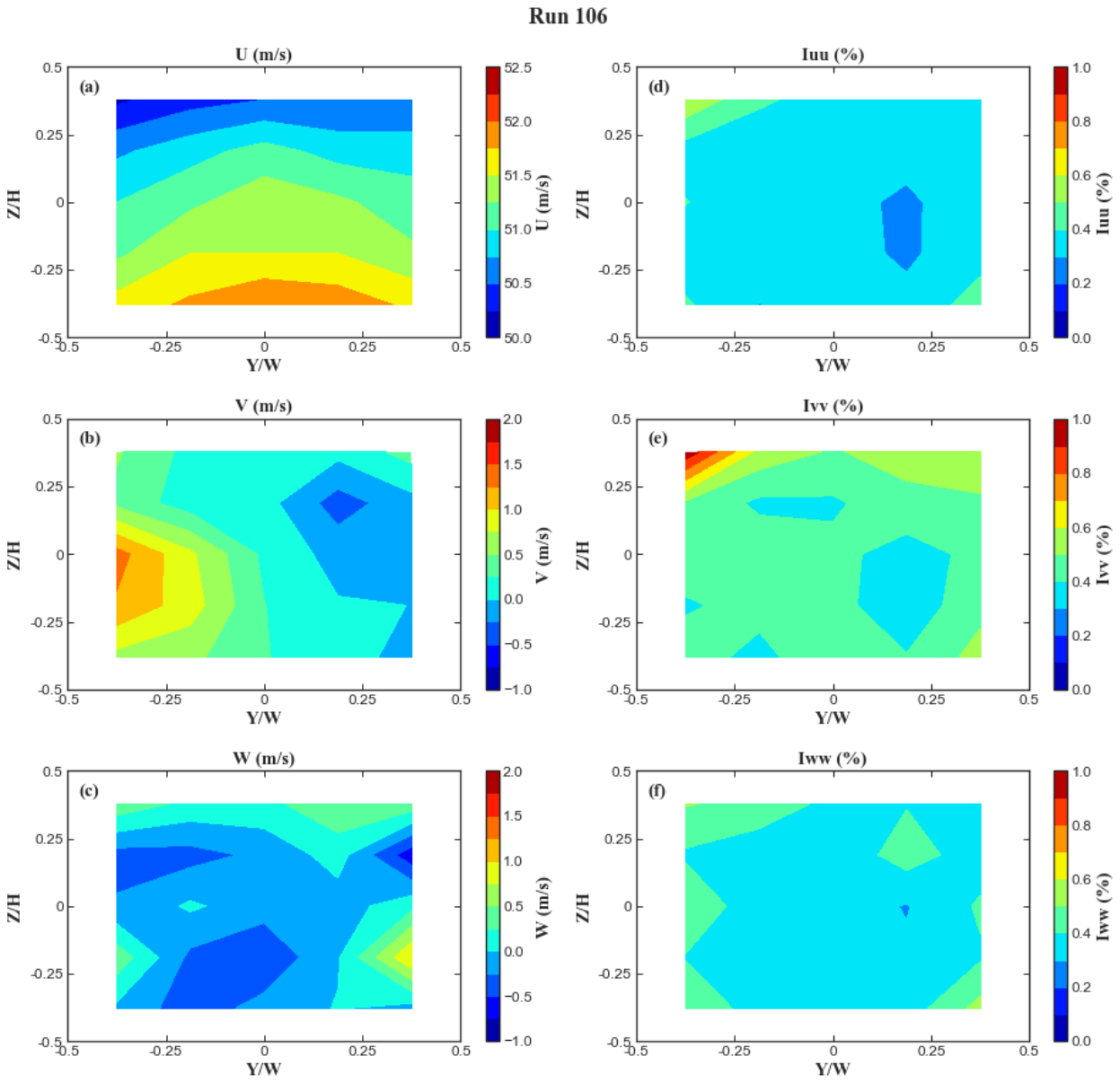

Run 97
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

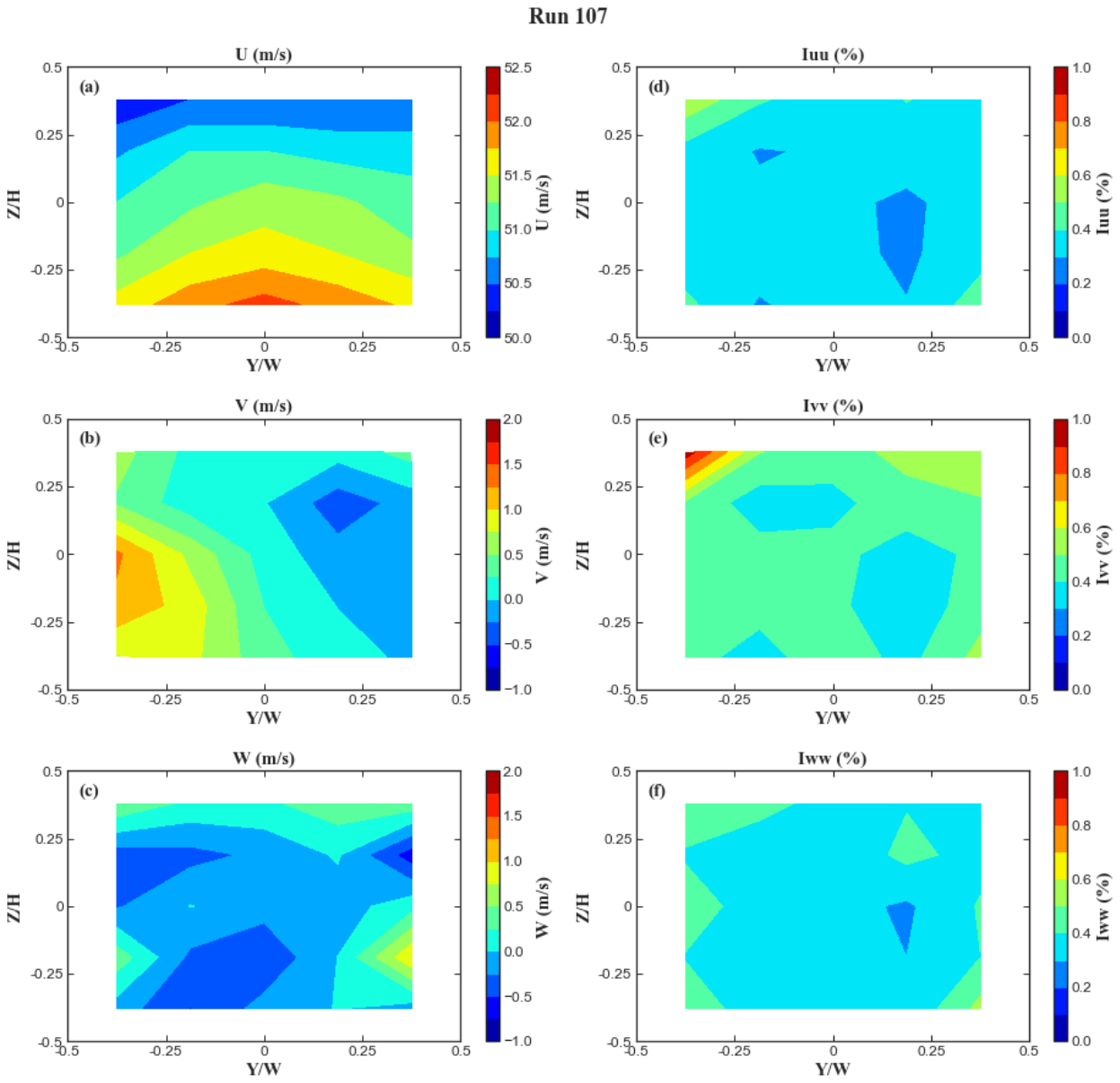

Run 99
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

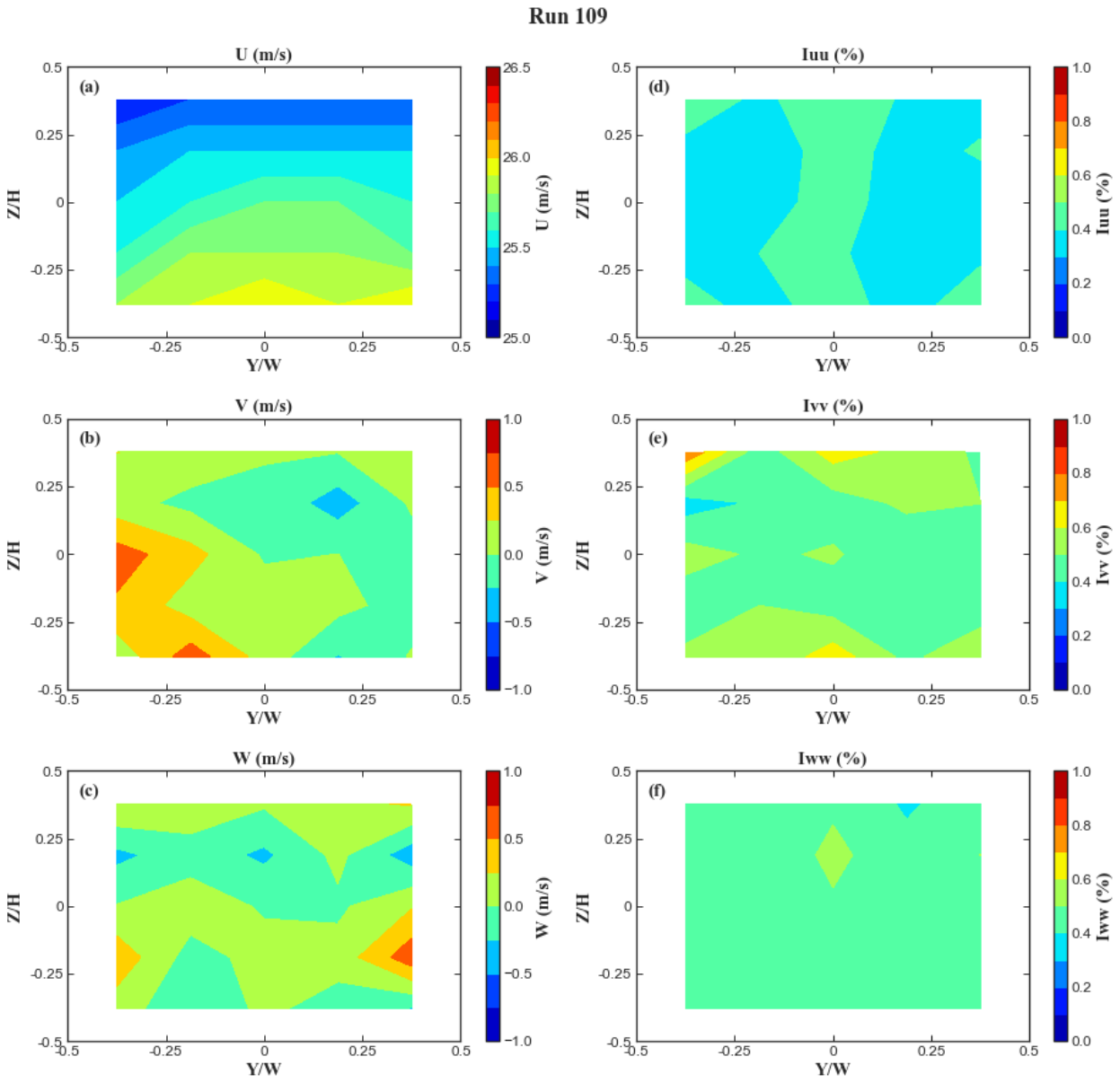

Run 100
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

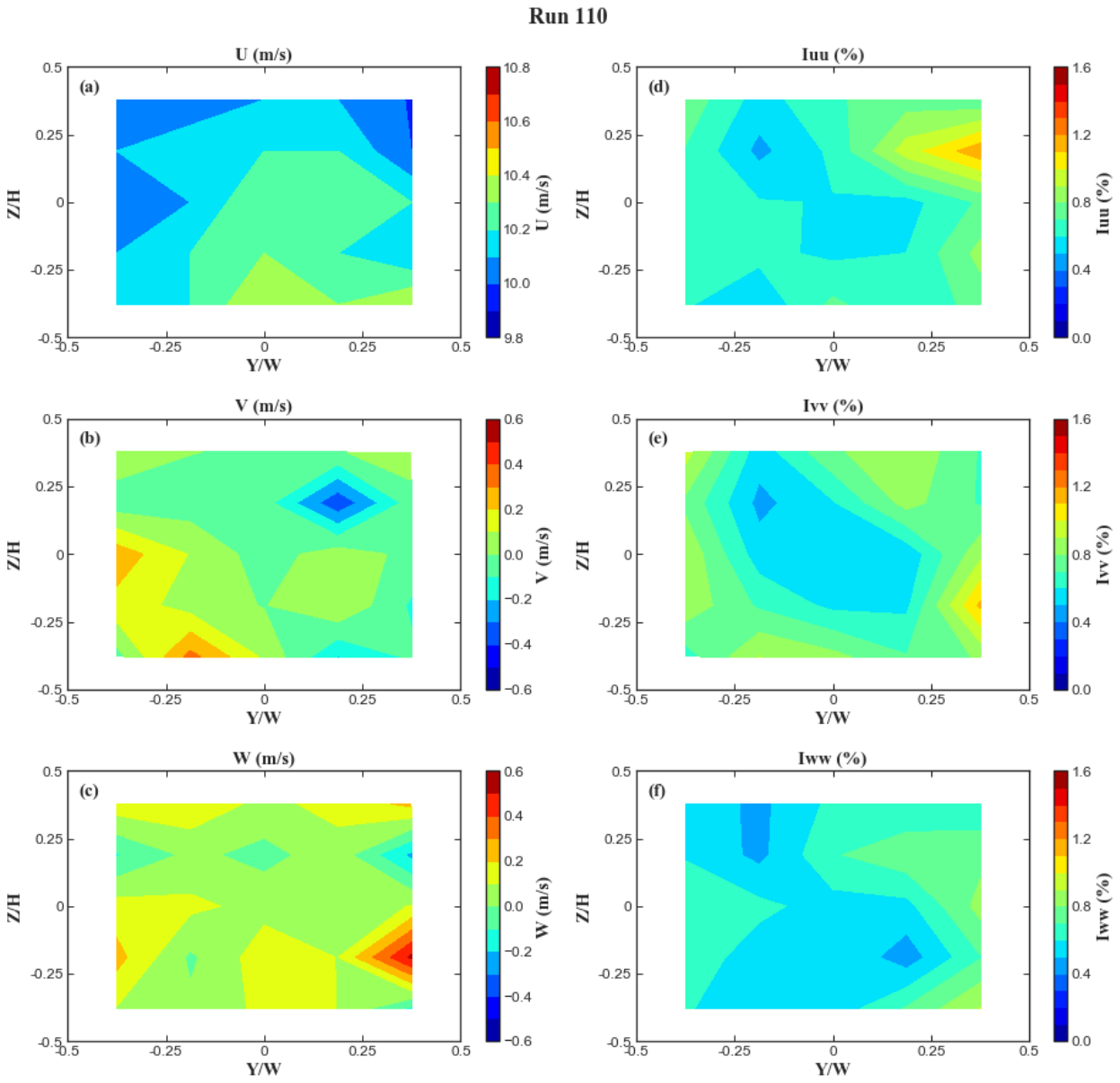

Run 101
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

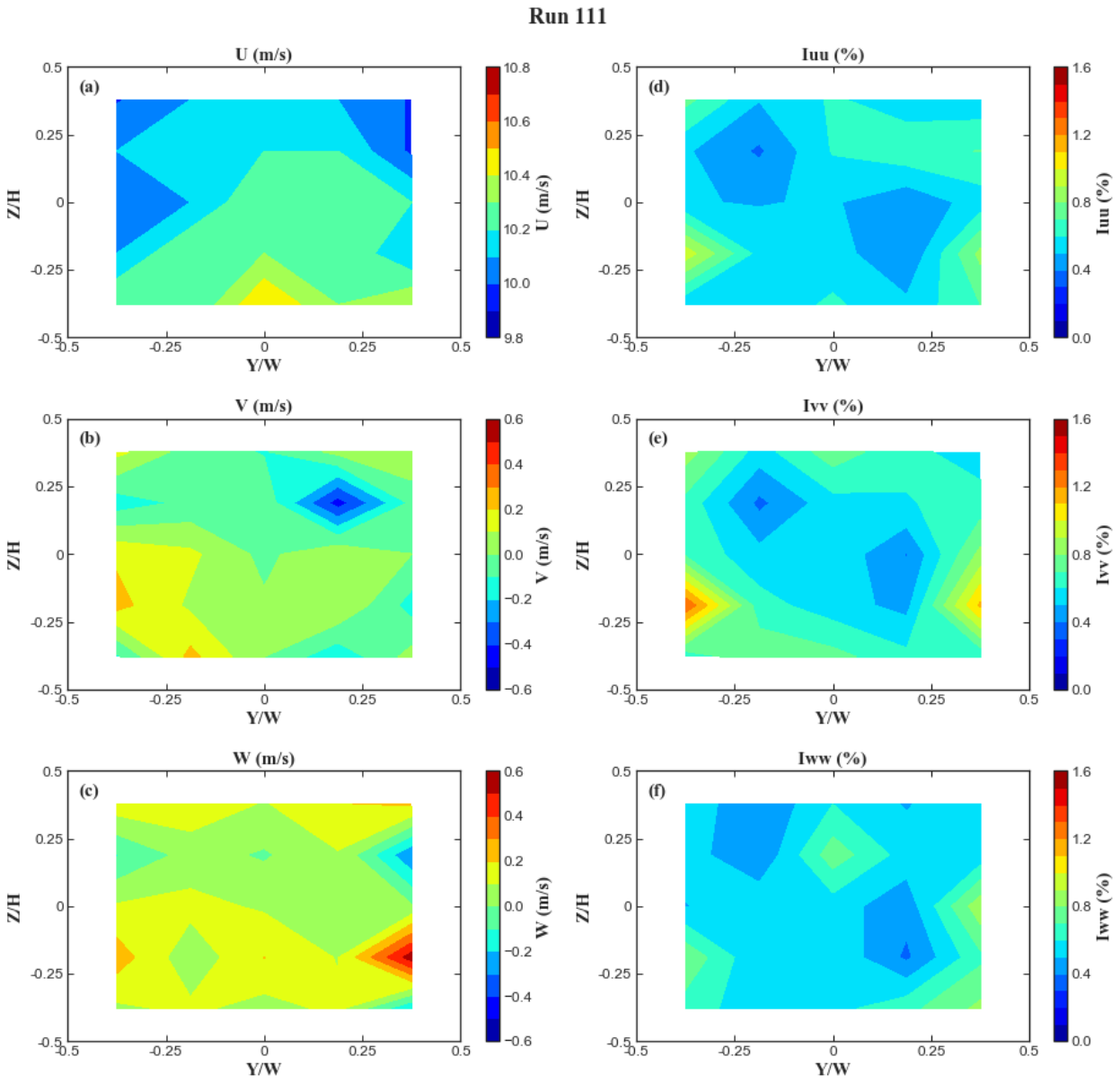

Run 102
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

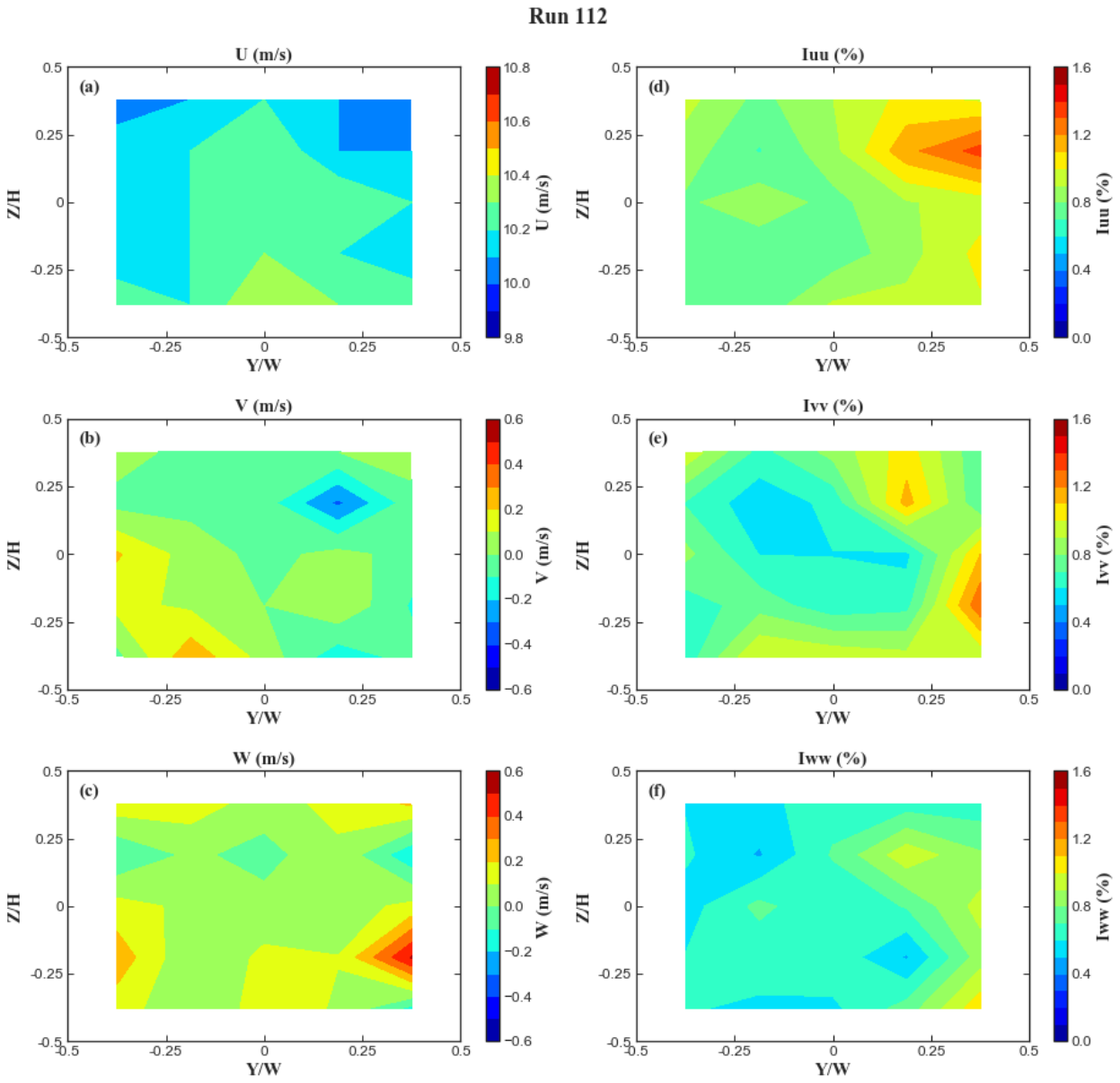

Run 106
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

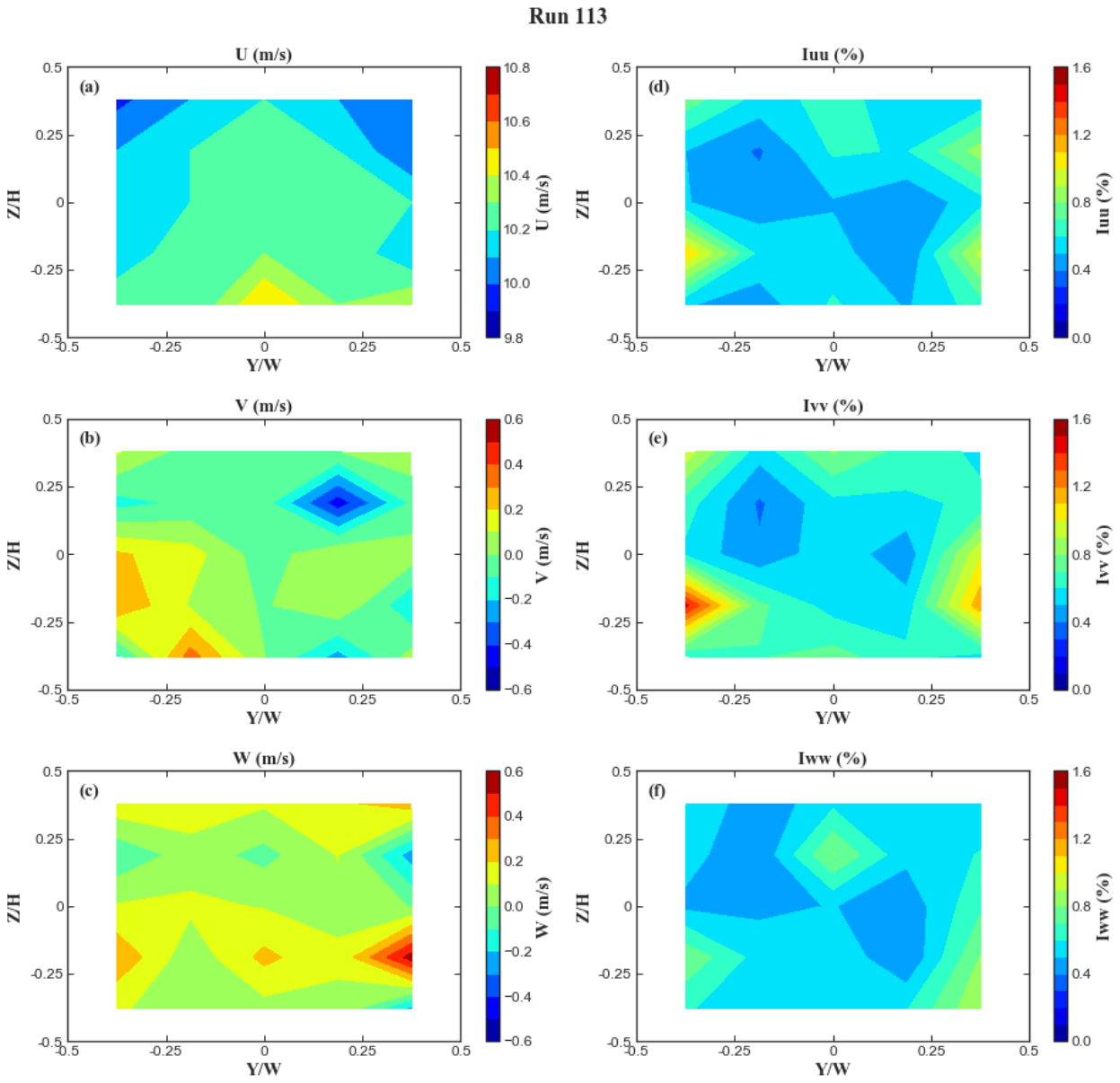

Run 107
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

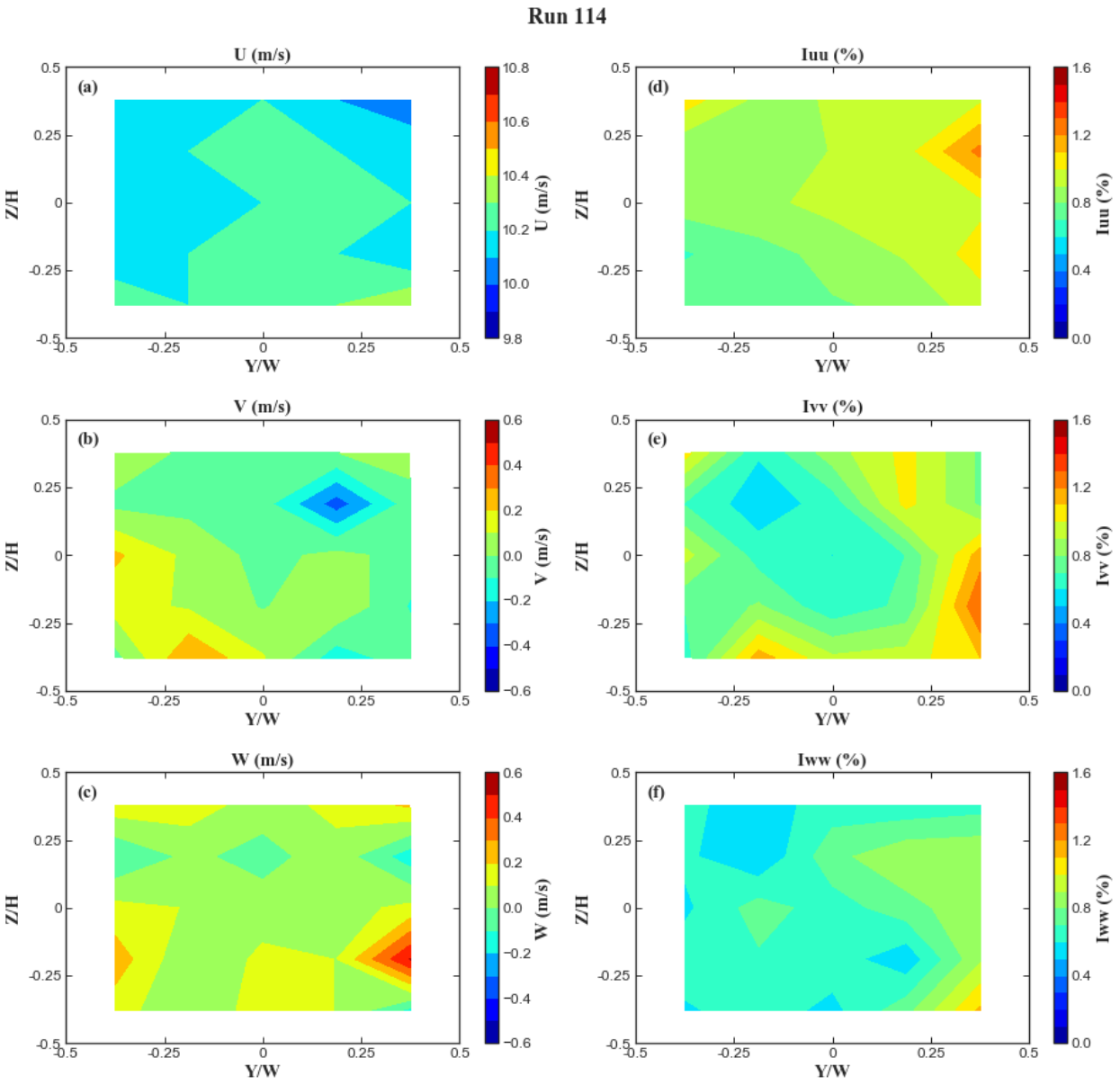

Run 109
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

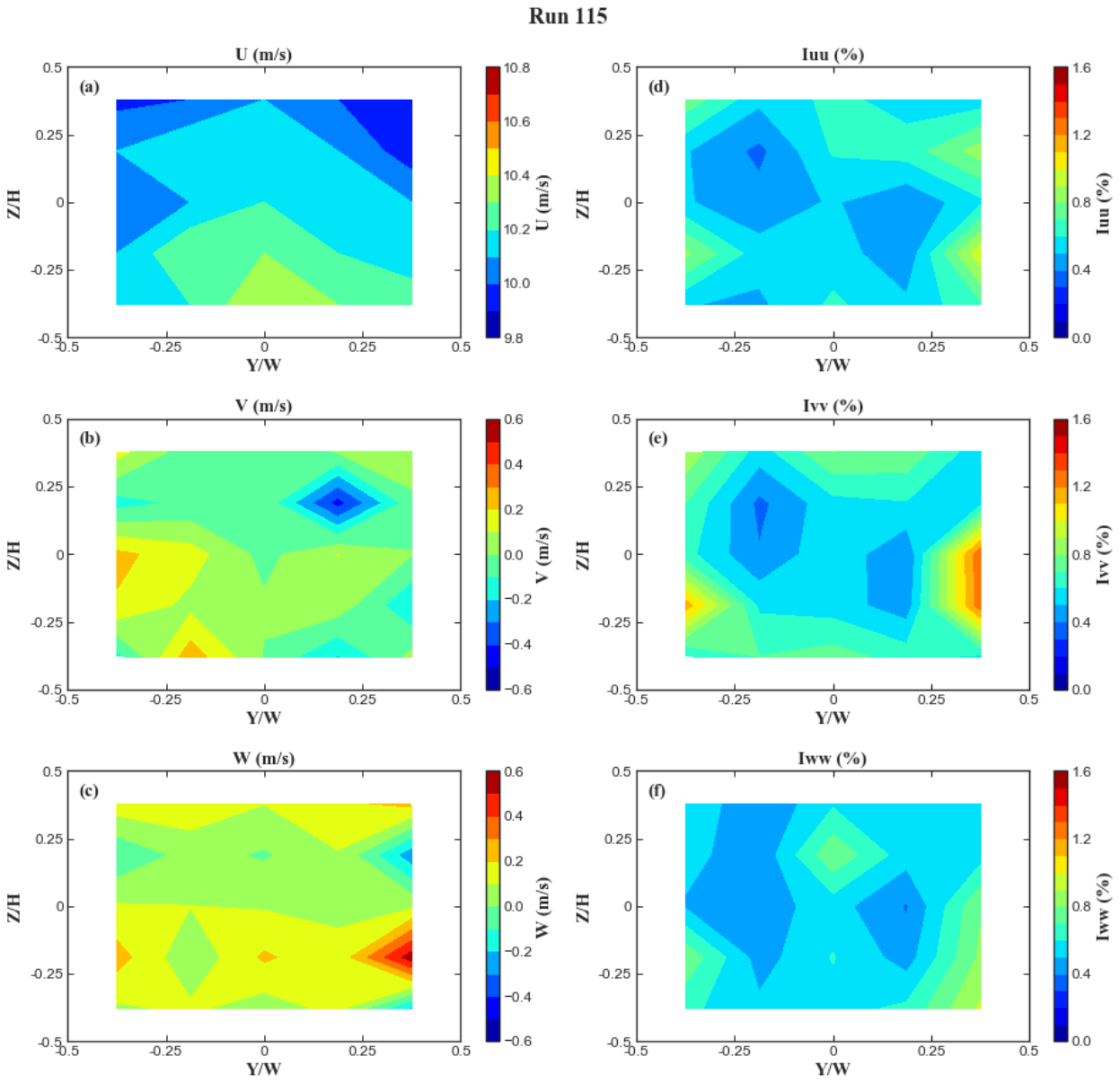

Run 110
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

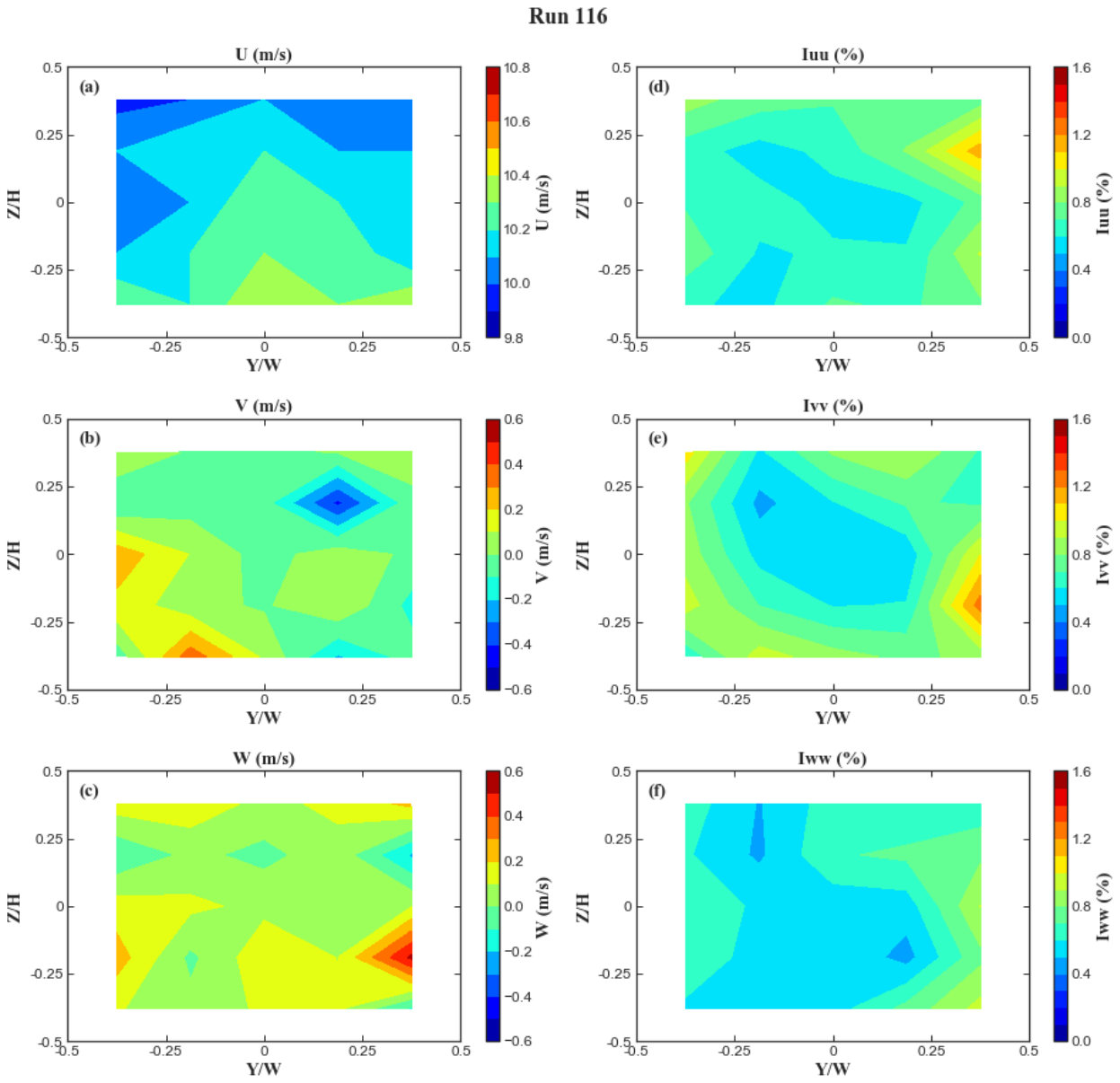

Run 111
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

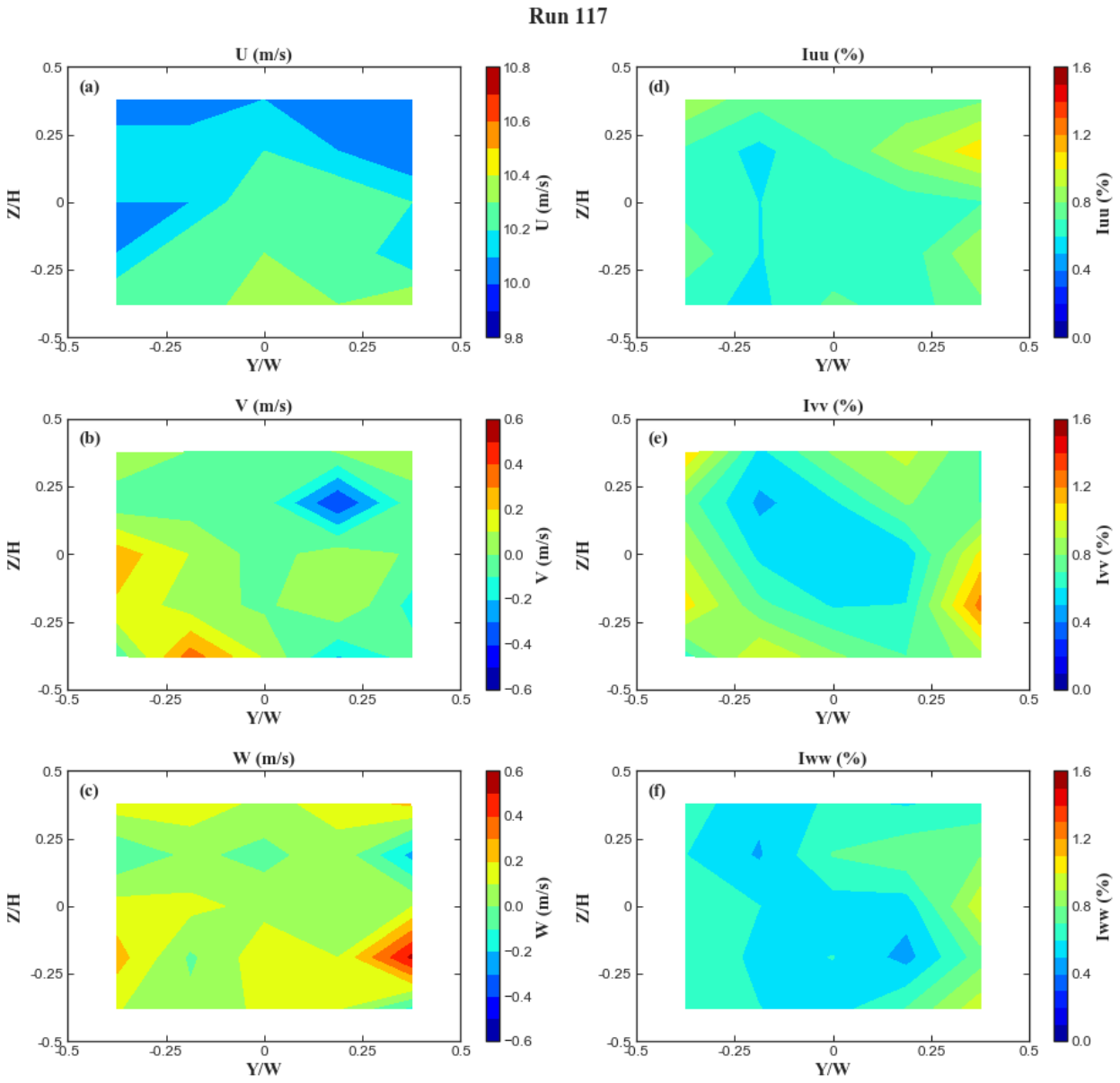

Run 112
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 113
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

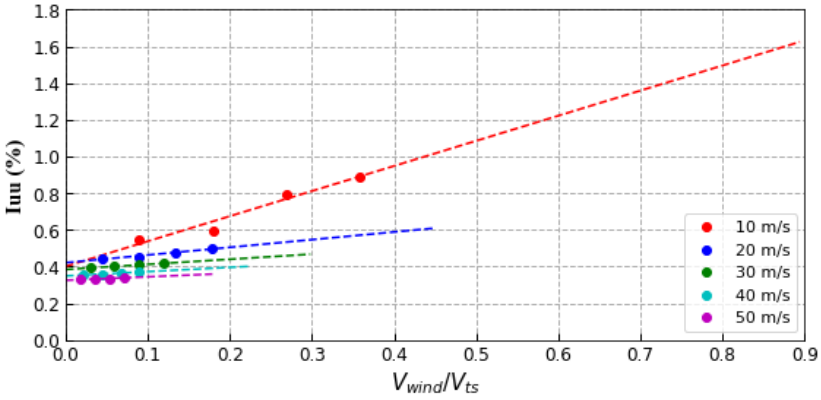

Run 114
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

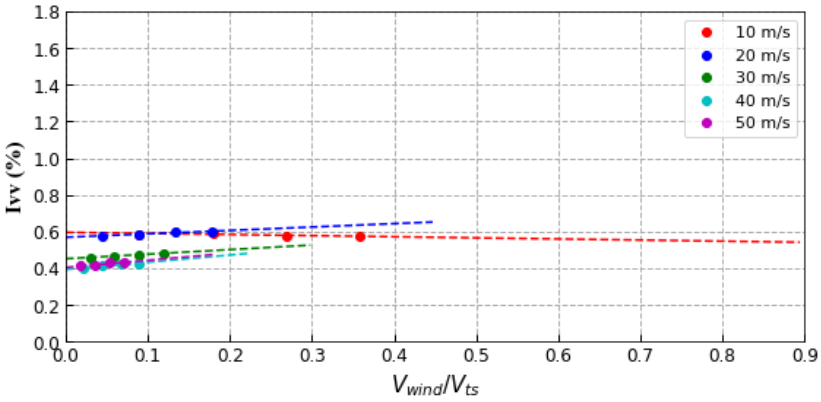

Run 115
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

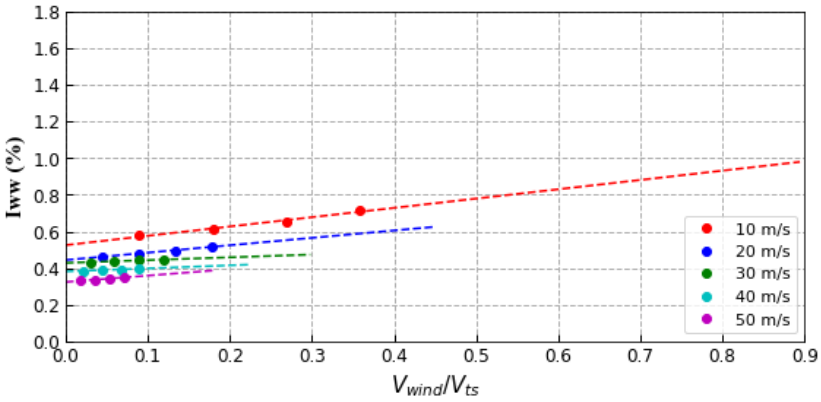

Run 116
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

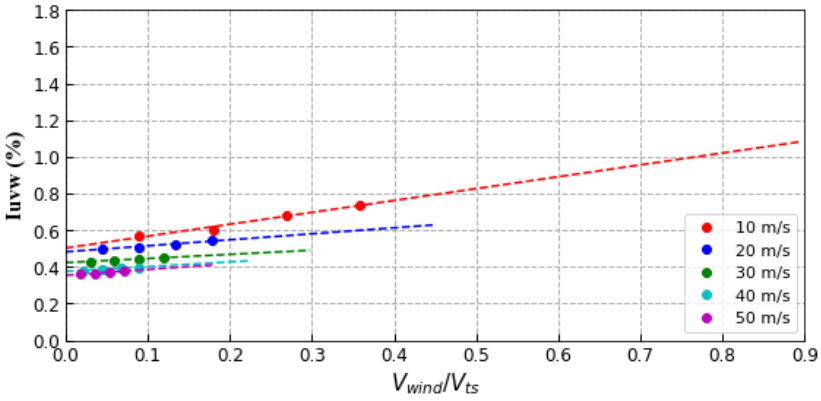

Run 117
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

Run 118

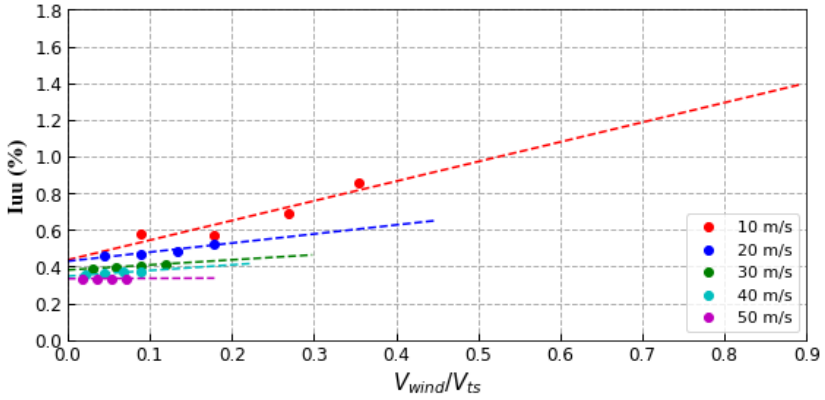

Iuu (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

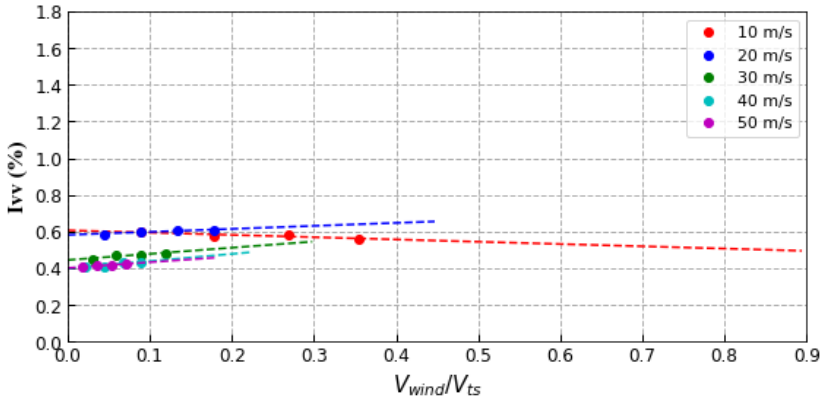

Ivv (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

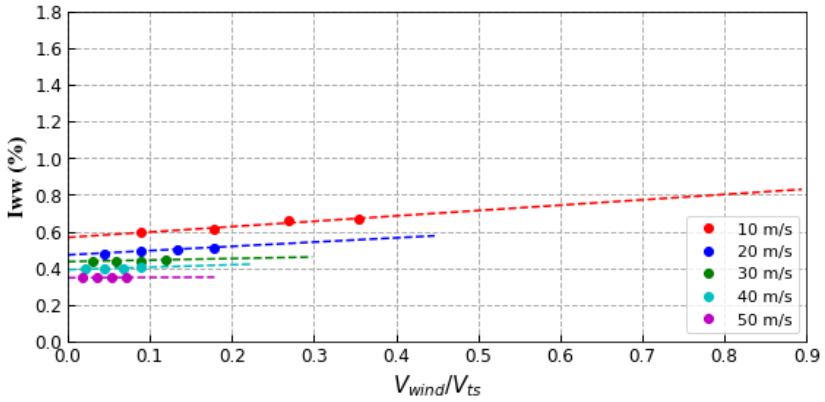

Iww (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

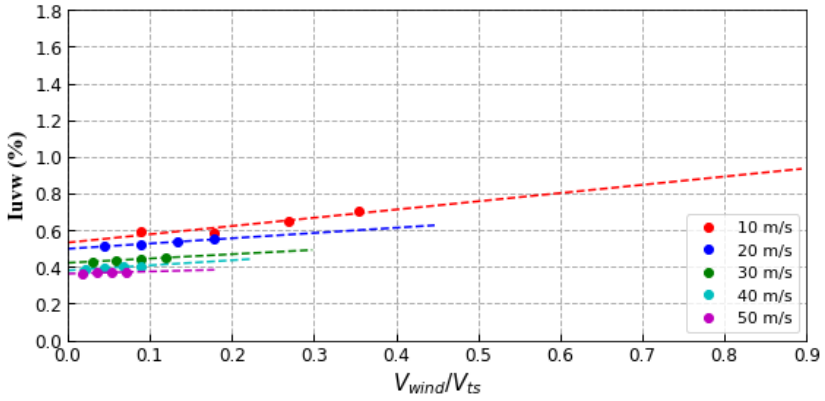

Iuvw (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

Run 120

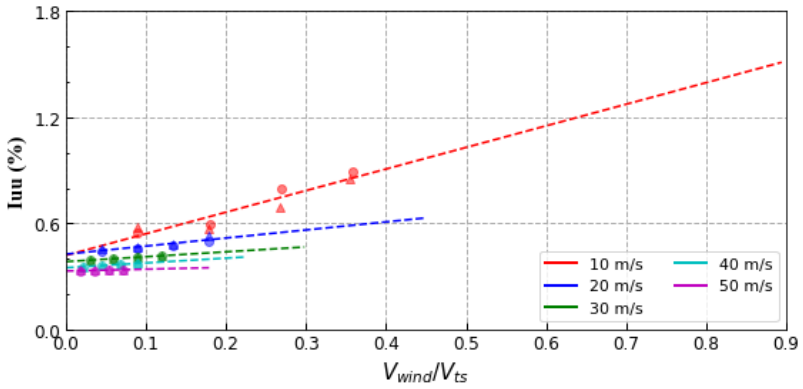

Iuu (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

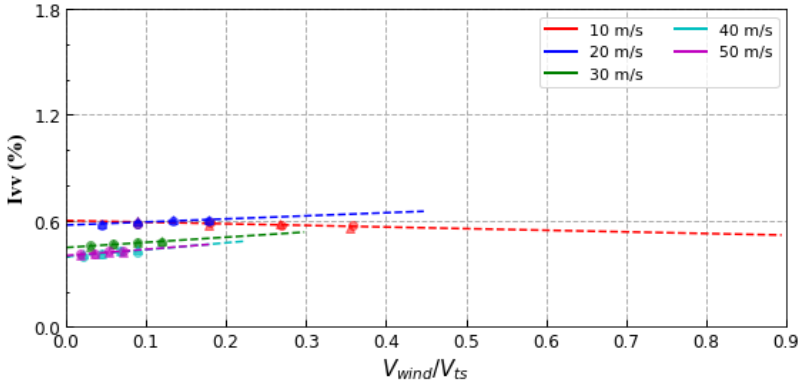

Ivv (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

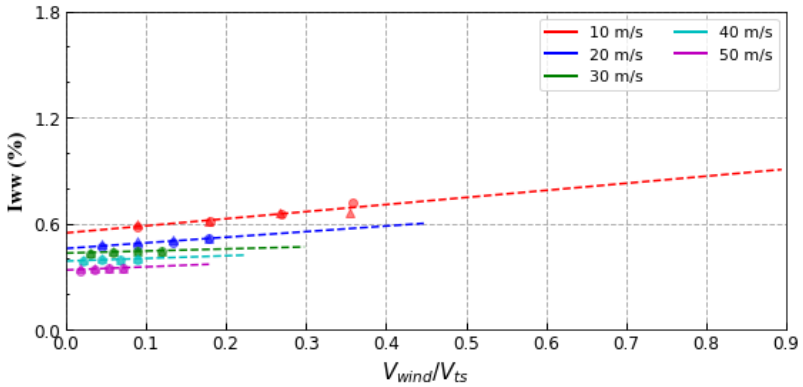

Iww (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

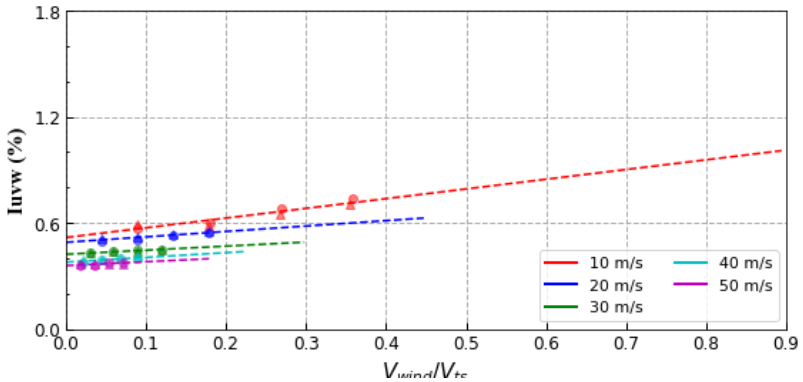

Iuvw (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

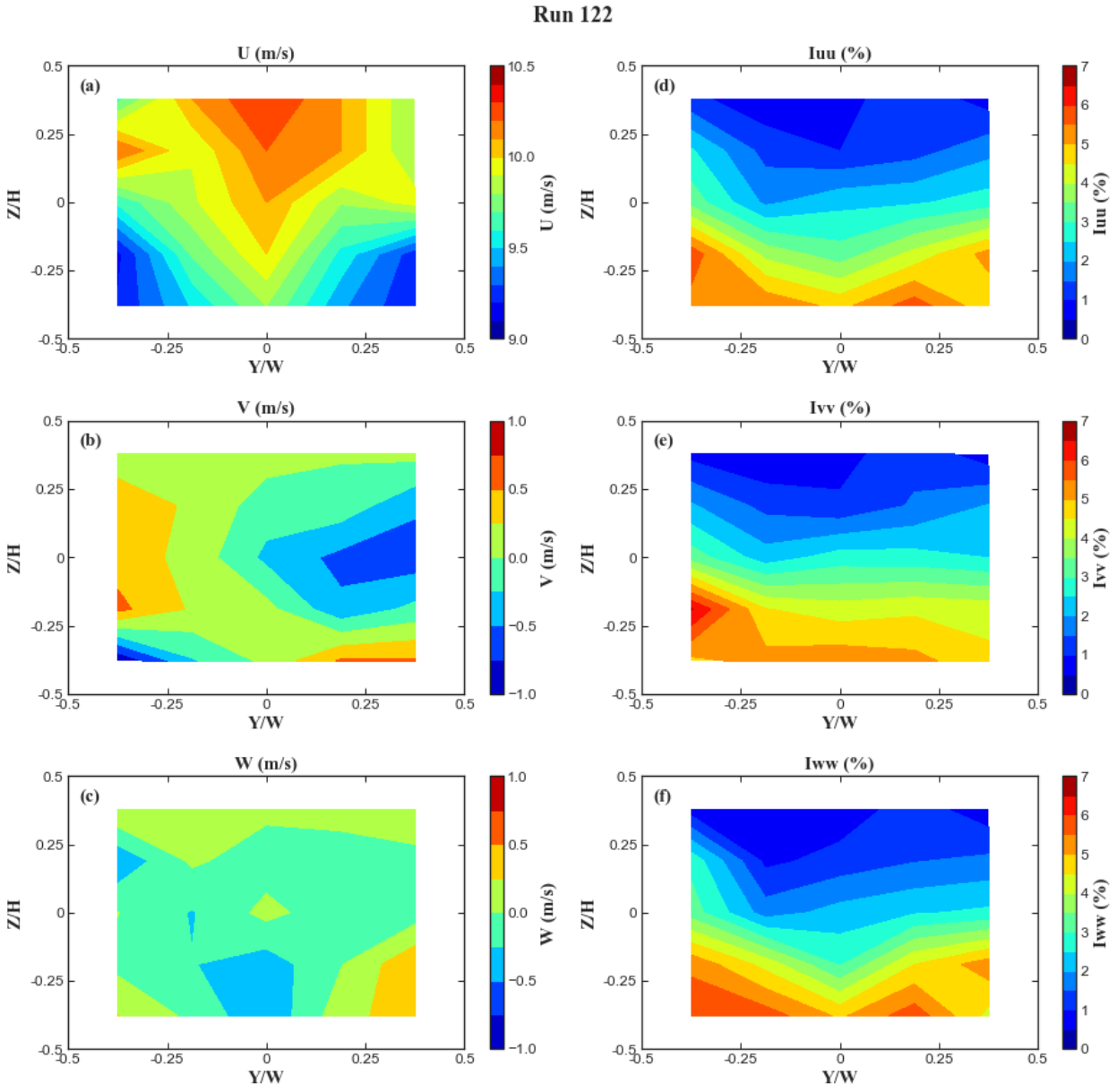
Runs 118 and 120 combined.

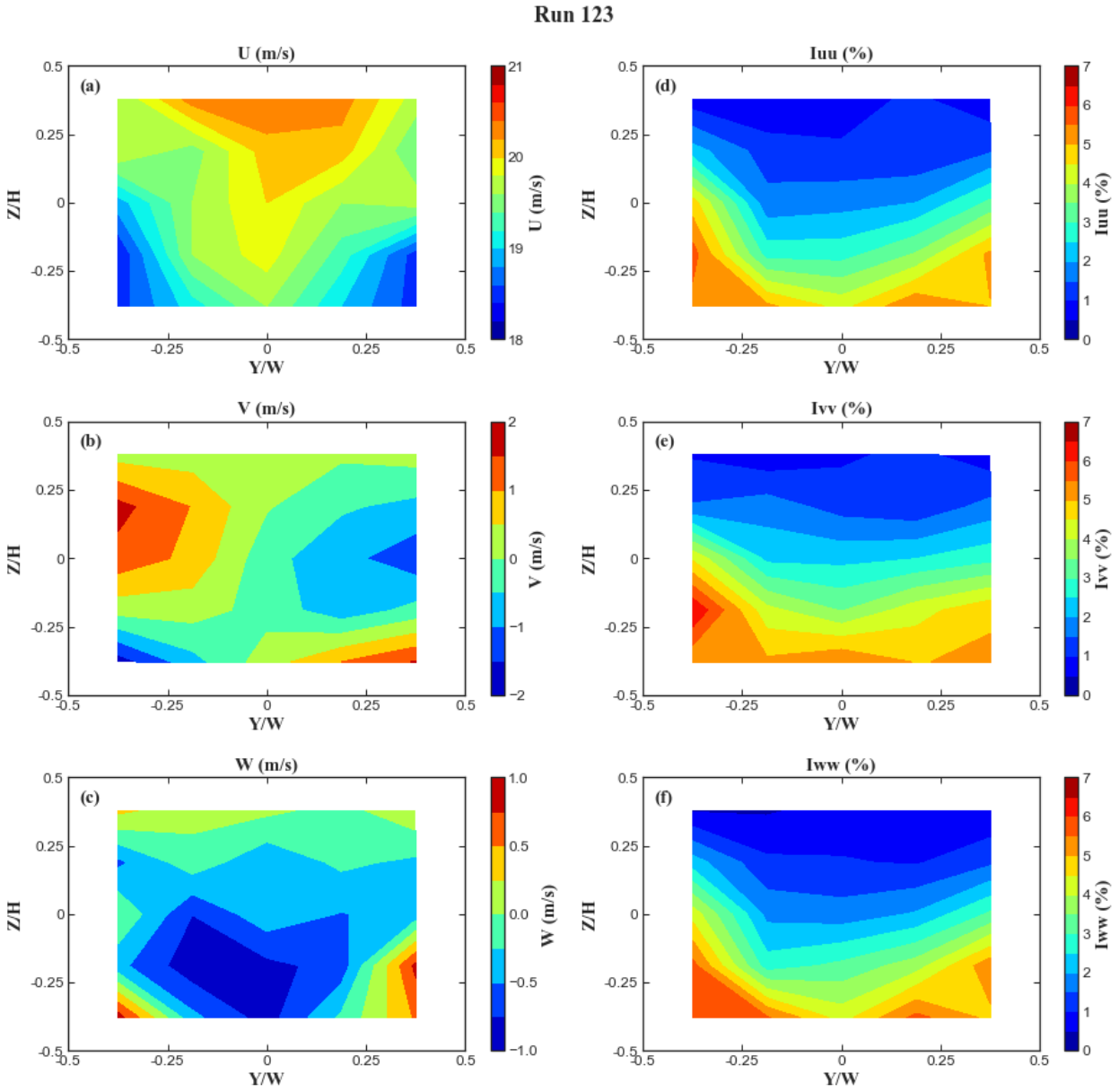


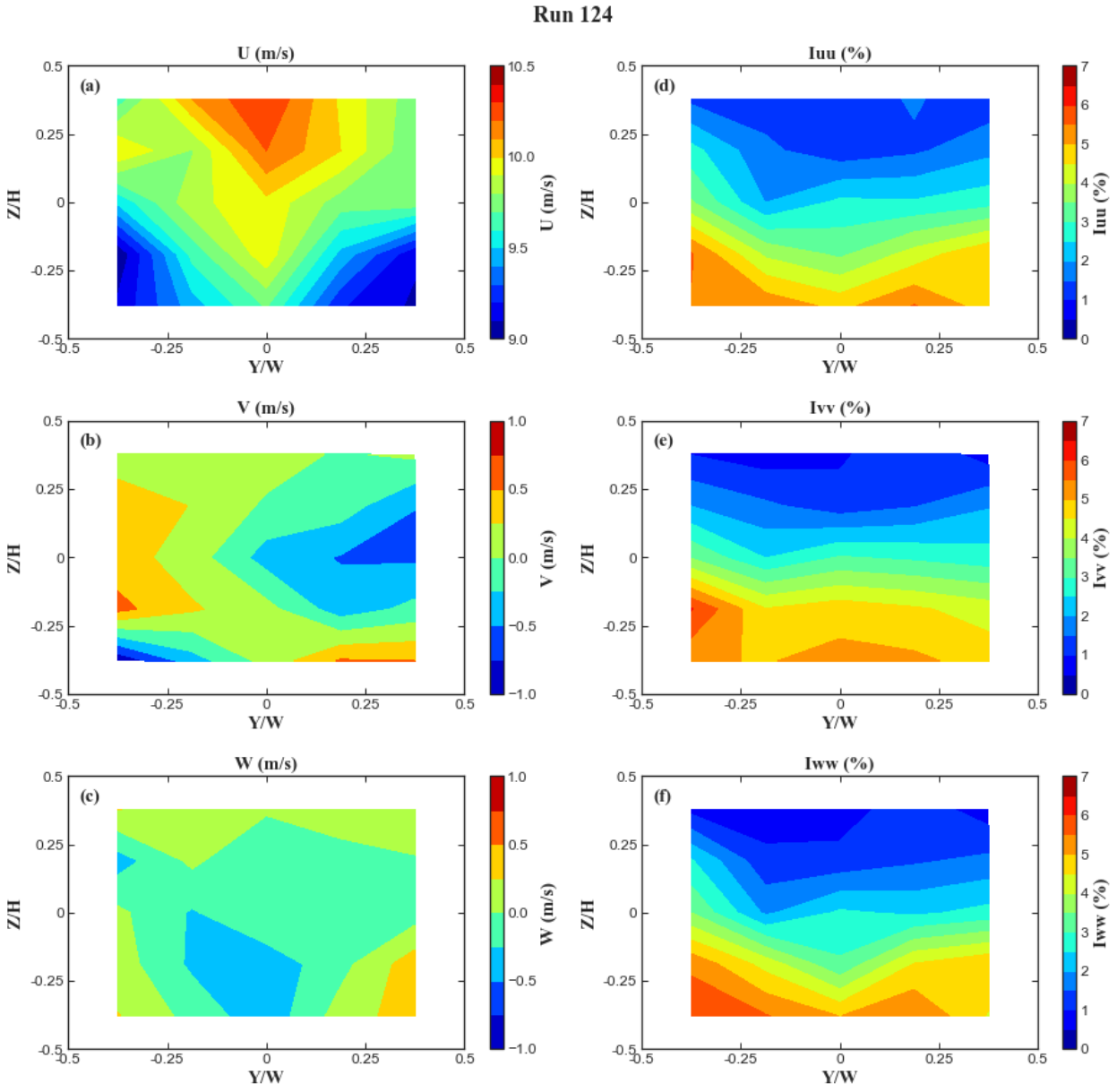


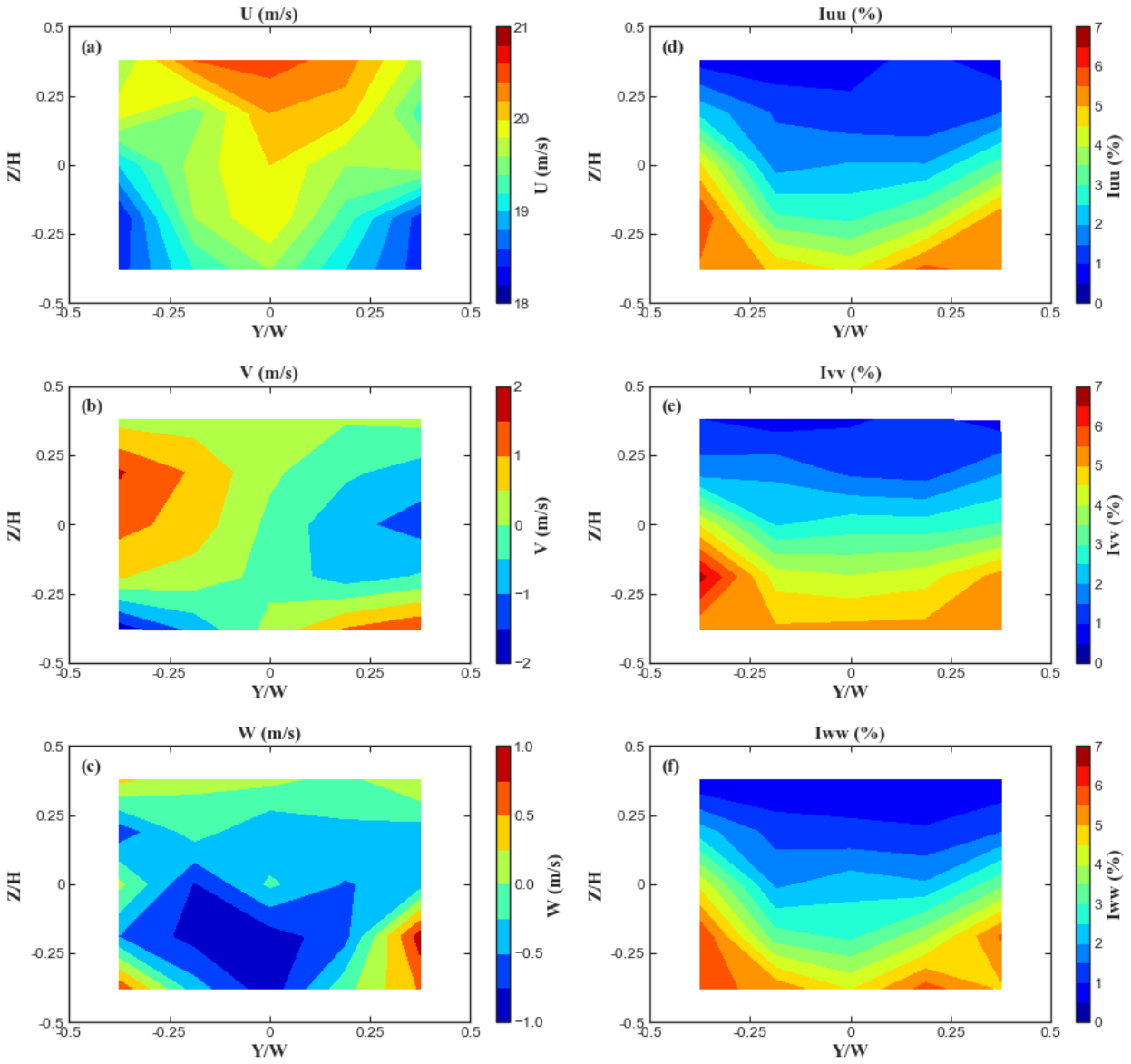


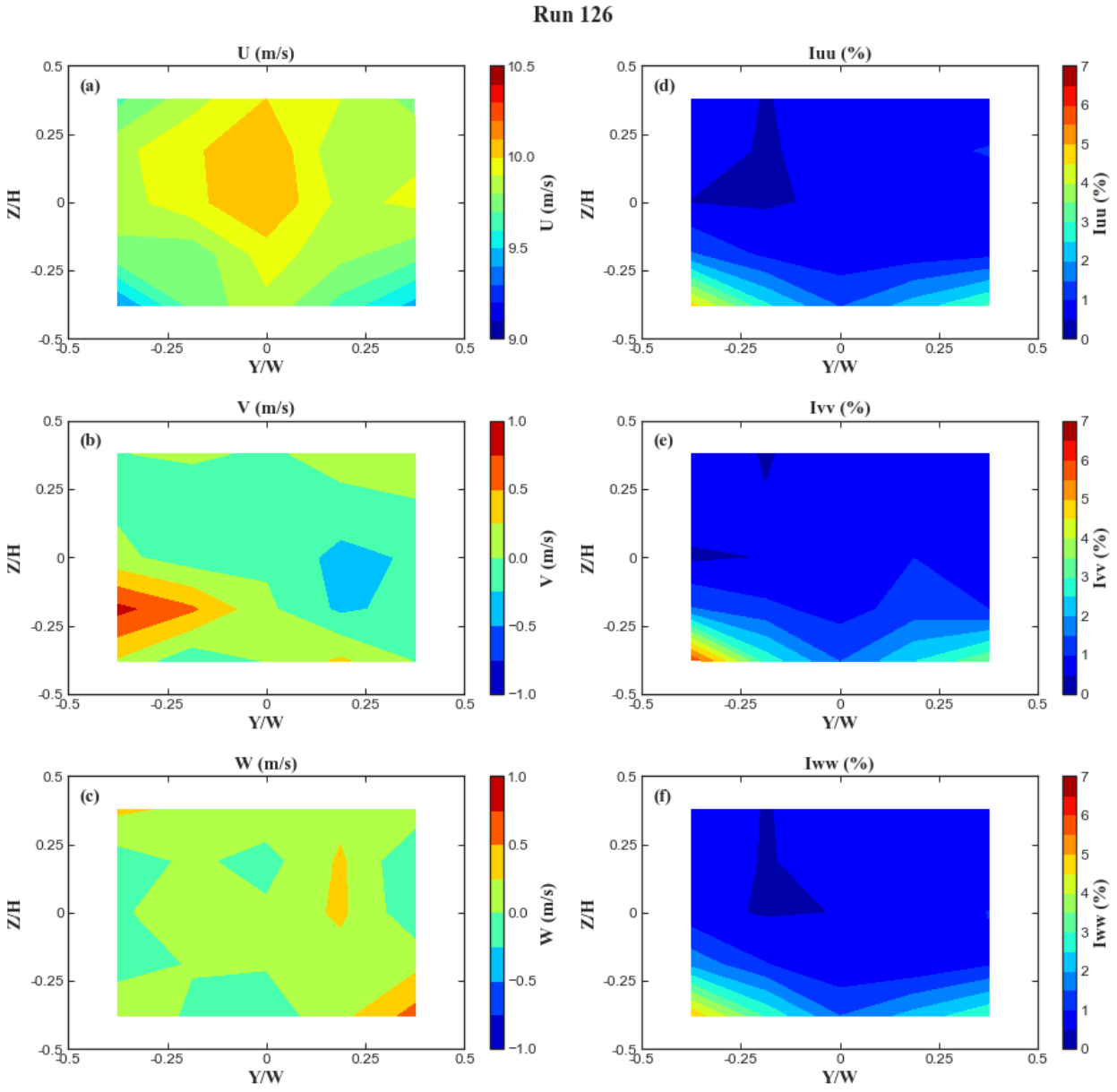


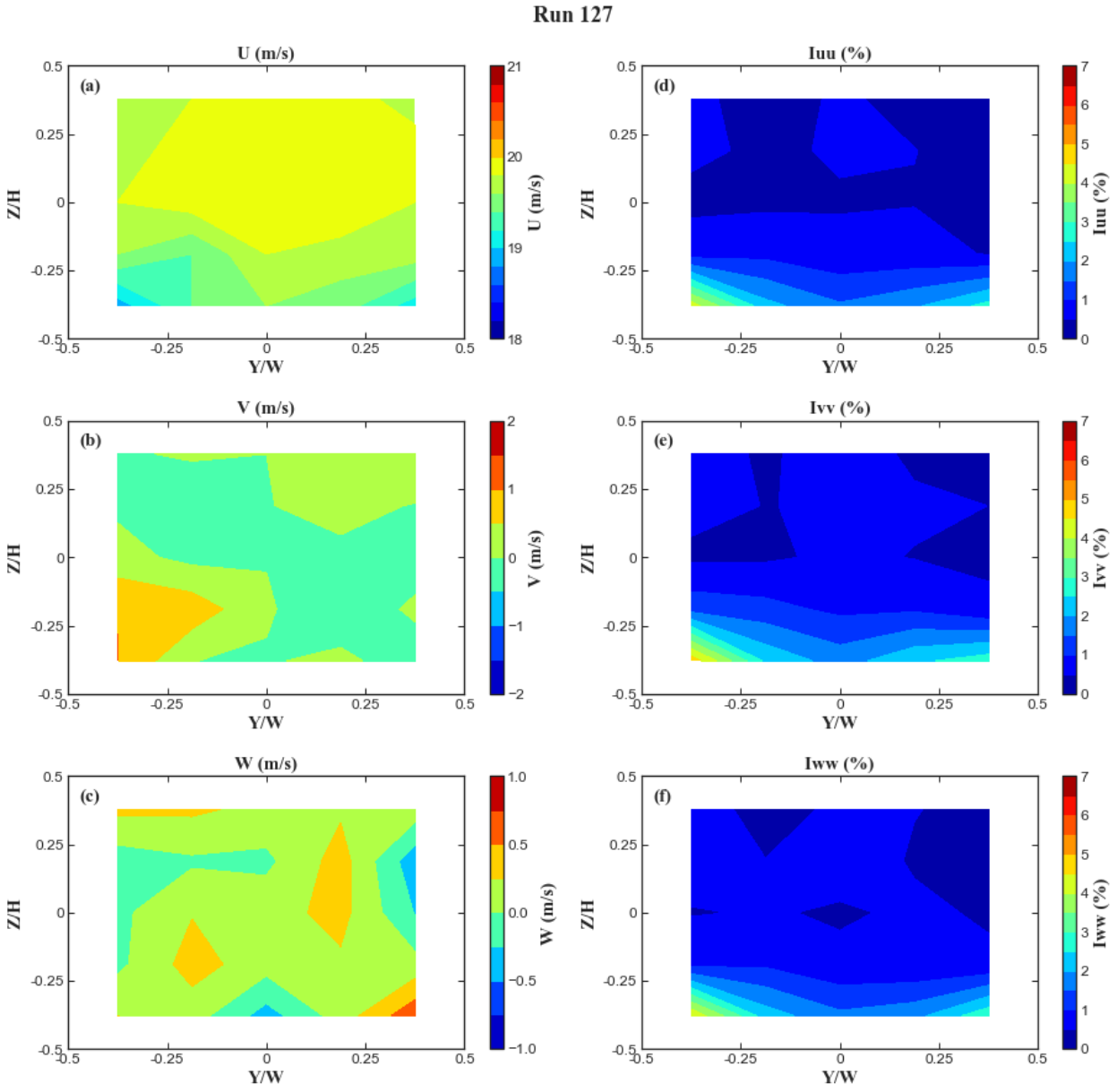

Run 122
U (m/s)
(a)
V (m/s)
(b)
W (m/s)
(c)
Iuu (%)
(d)
Ivv (%)
(e)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
V (m/s)
W (m/s)
Iuu (%)
Ivv (%)
Iww (%)

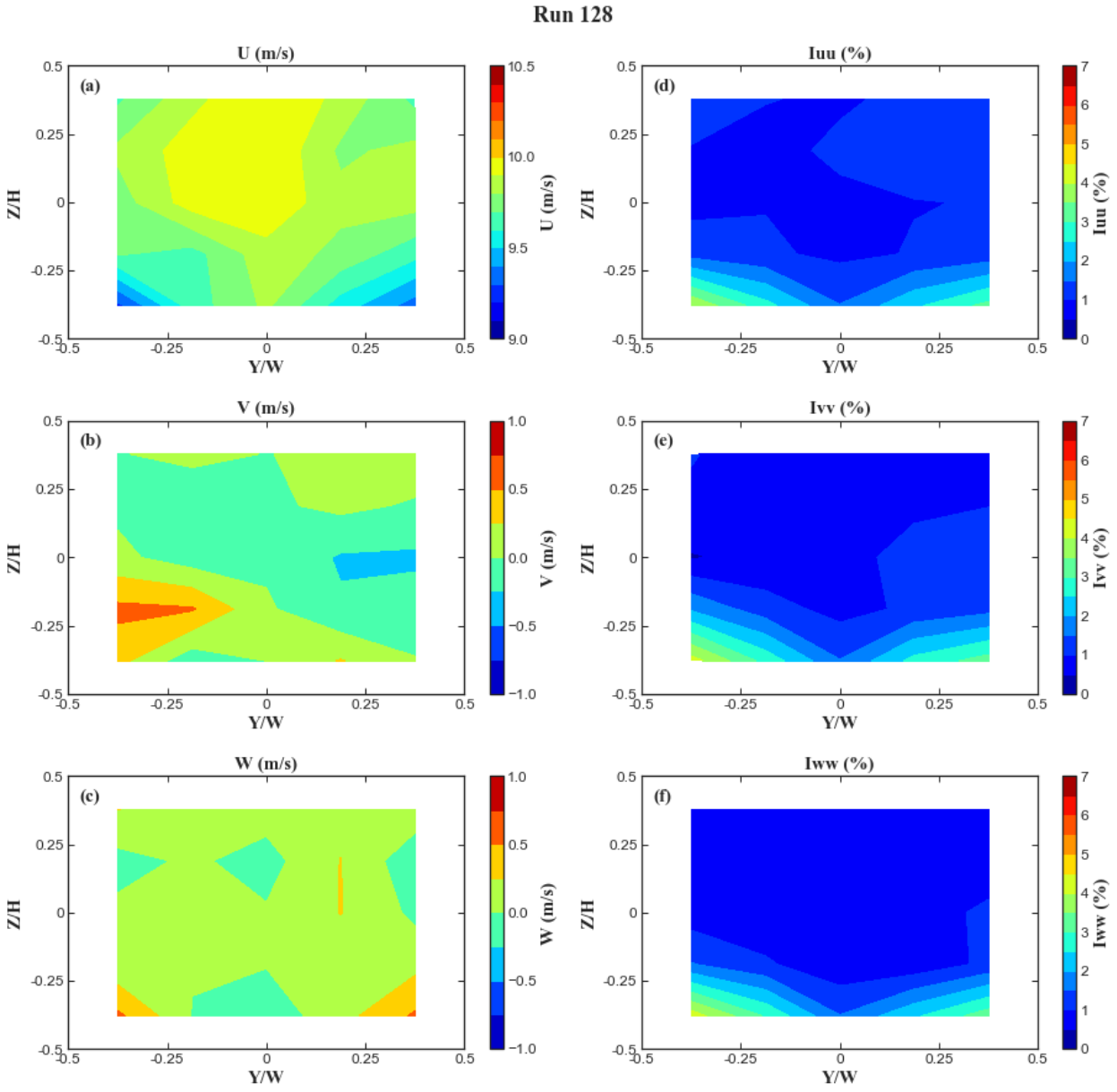

Run 123
U (m/s)
(a)
V (m/s)
(b)
W (m/s)
(c)
Iuu (%)
(d)
Ivv (%)
(e)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
V (m/s)
W (m/s)
Iuu (%)
Ivv (%)
Iww (%)

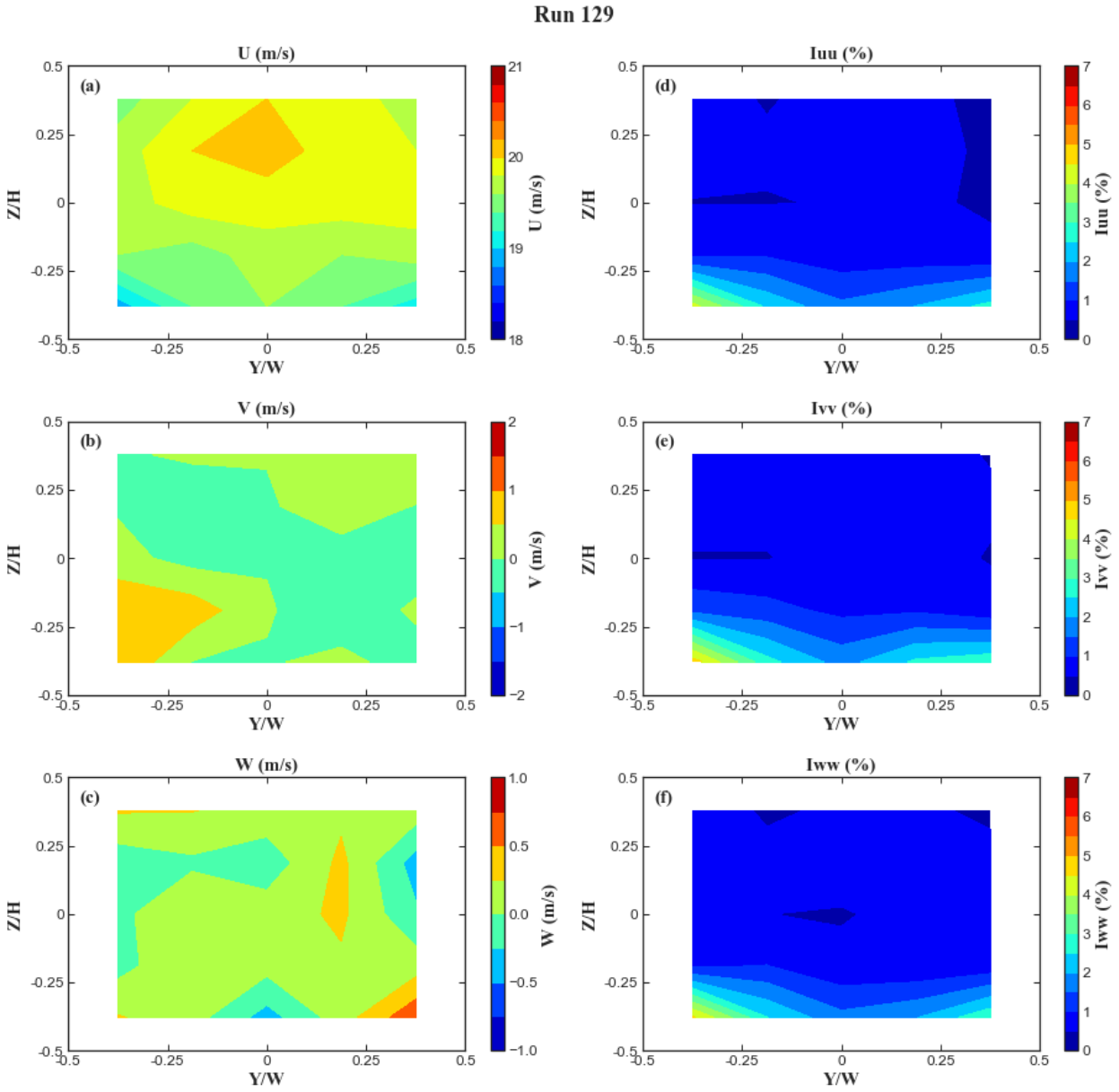

Run 124
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 125
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

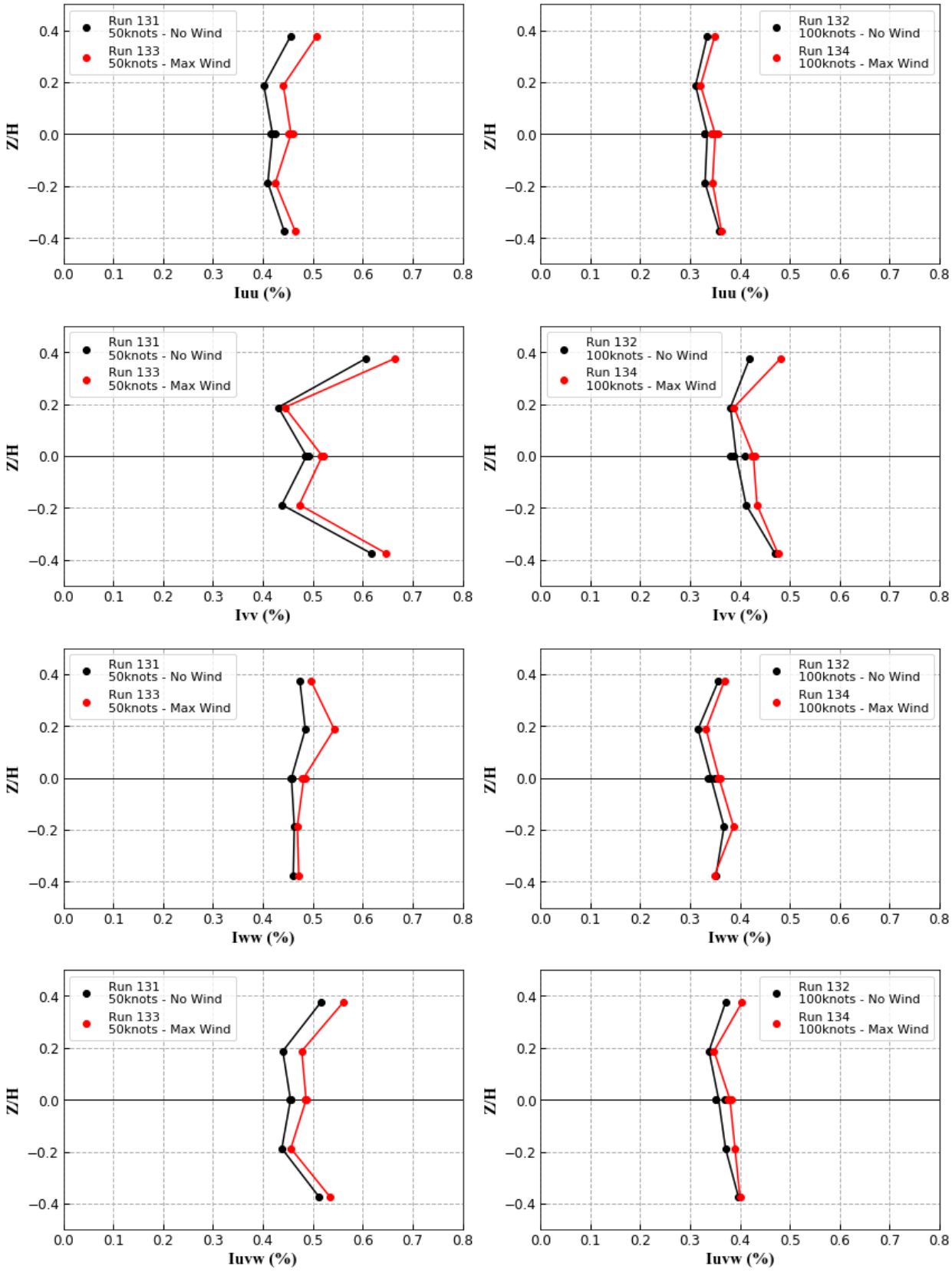

Run 126
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 127
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

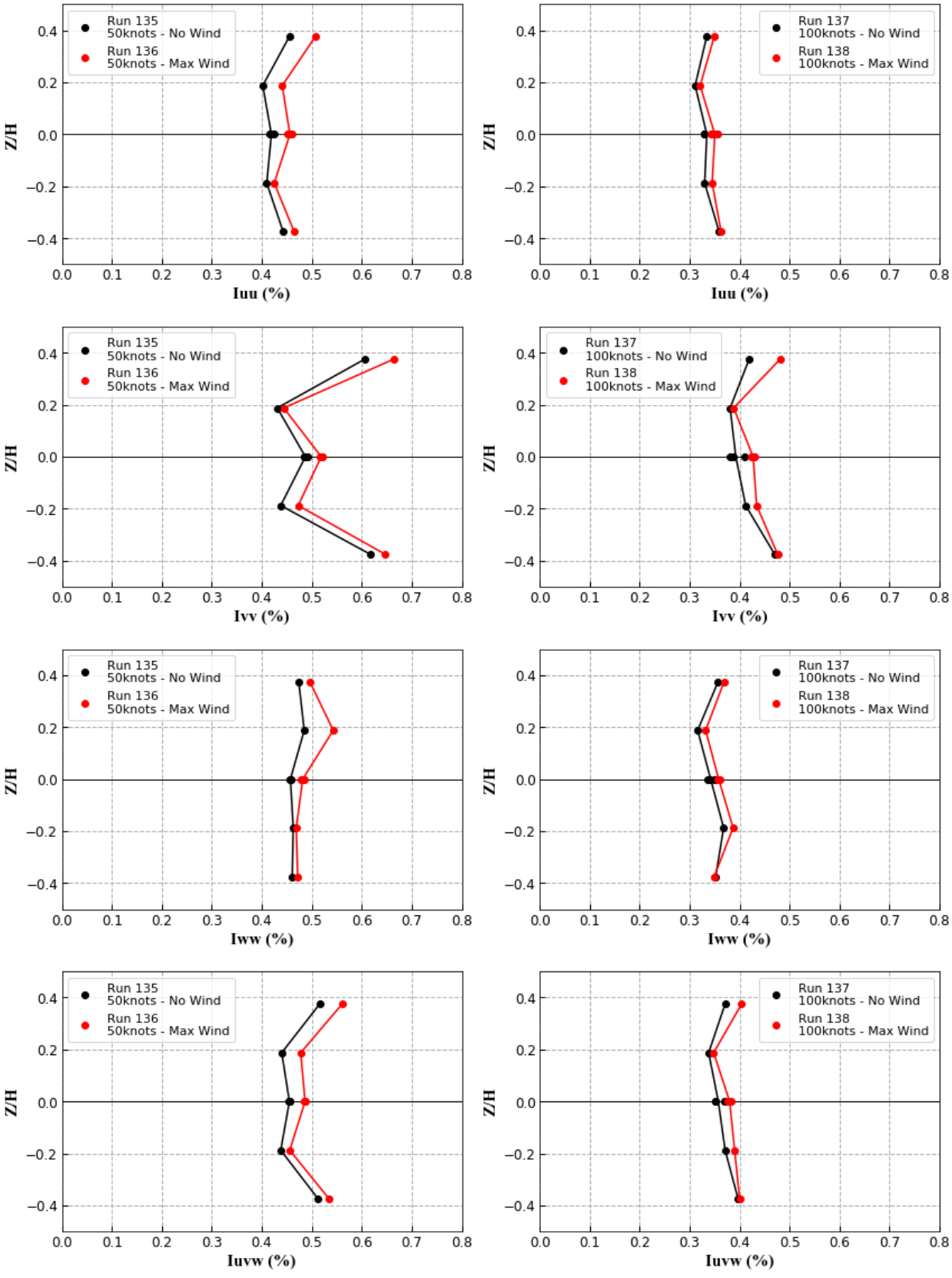

Run 128
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 129
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

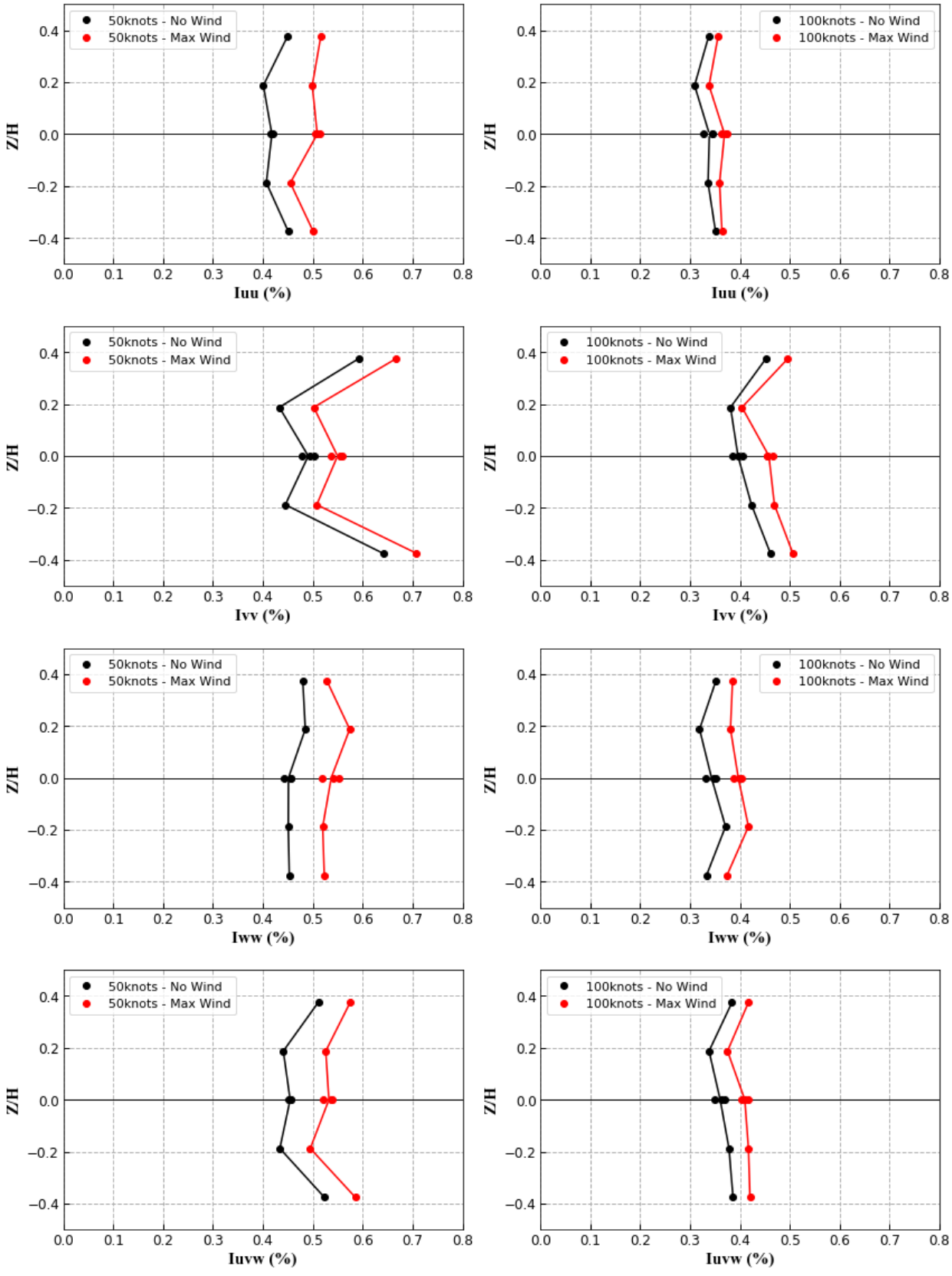
Run 131-134


Run 131
50knots - No Wind
Run 133
50knots - Max Wind
Run 132
100knots - No Wind
Run 134
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

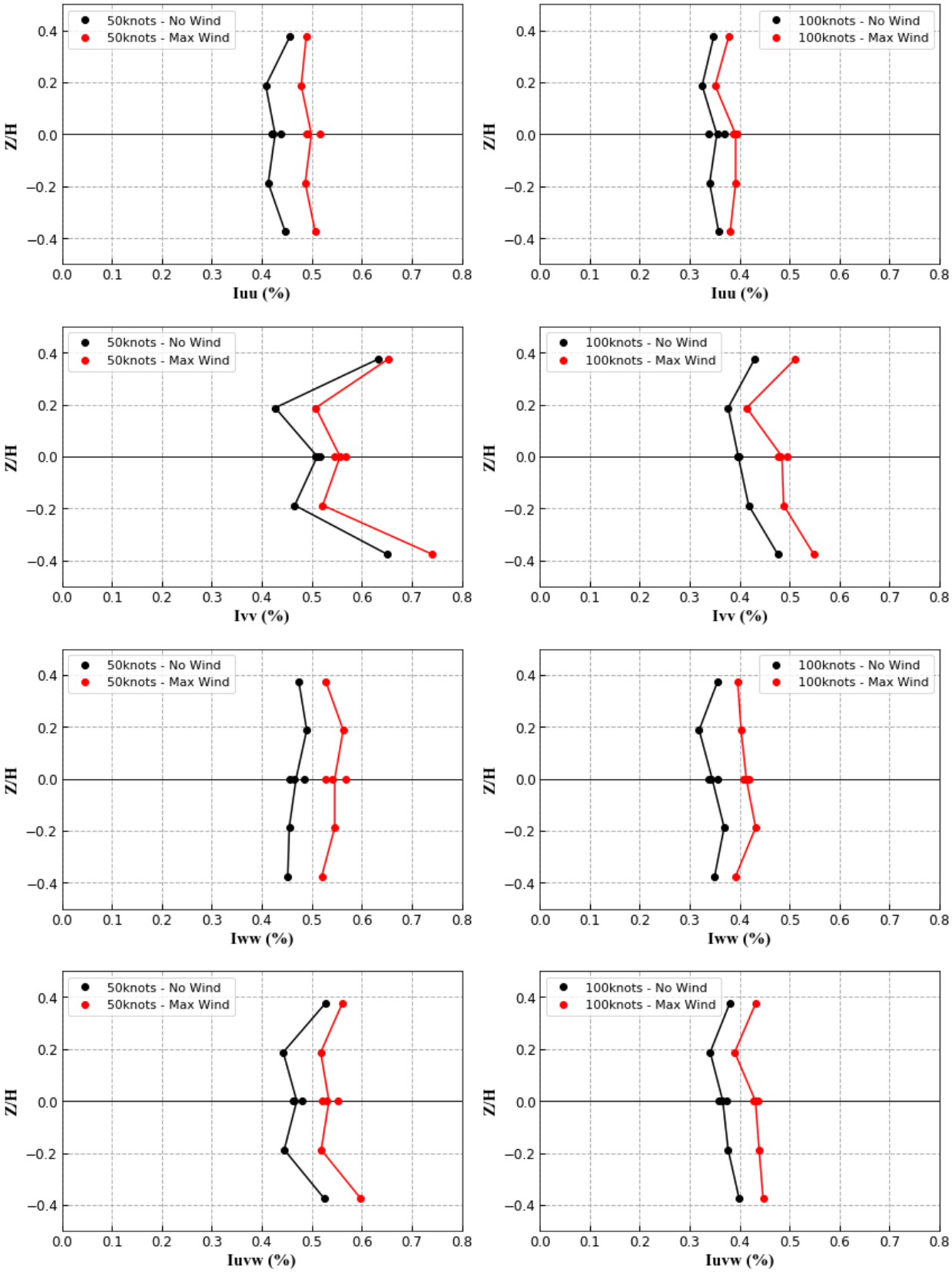
Run 135-138


Run 135
50knots - No Wind
Run 136
50knots - Max Wind
Run 137
100knots - No Wind
Run 138
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

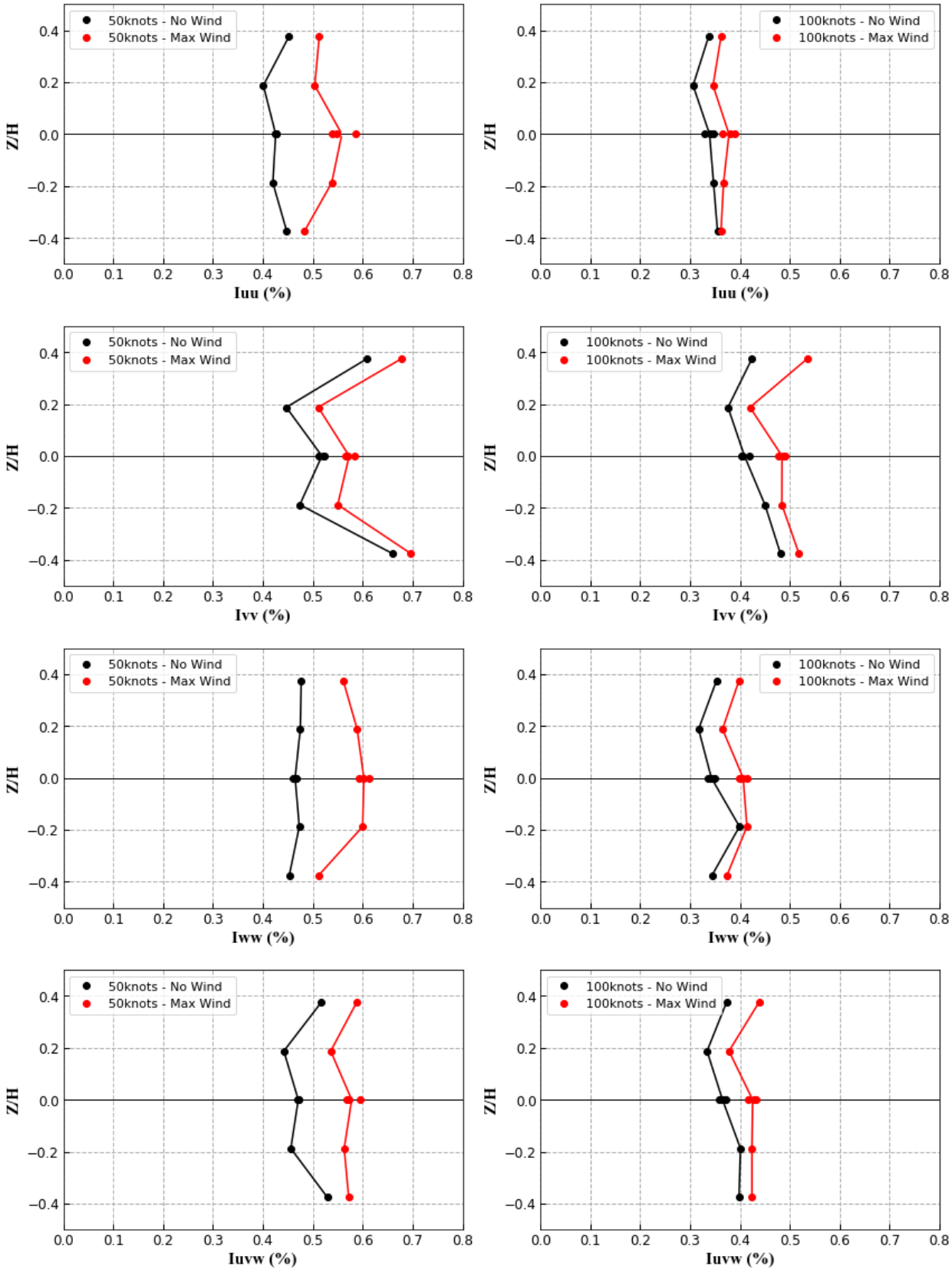
Run 139


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

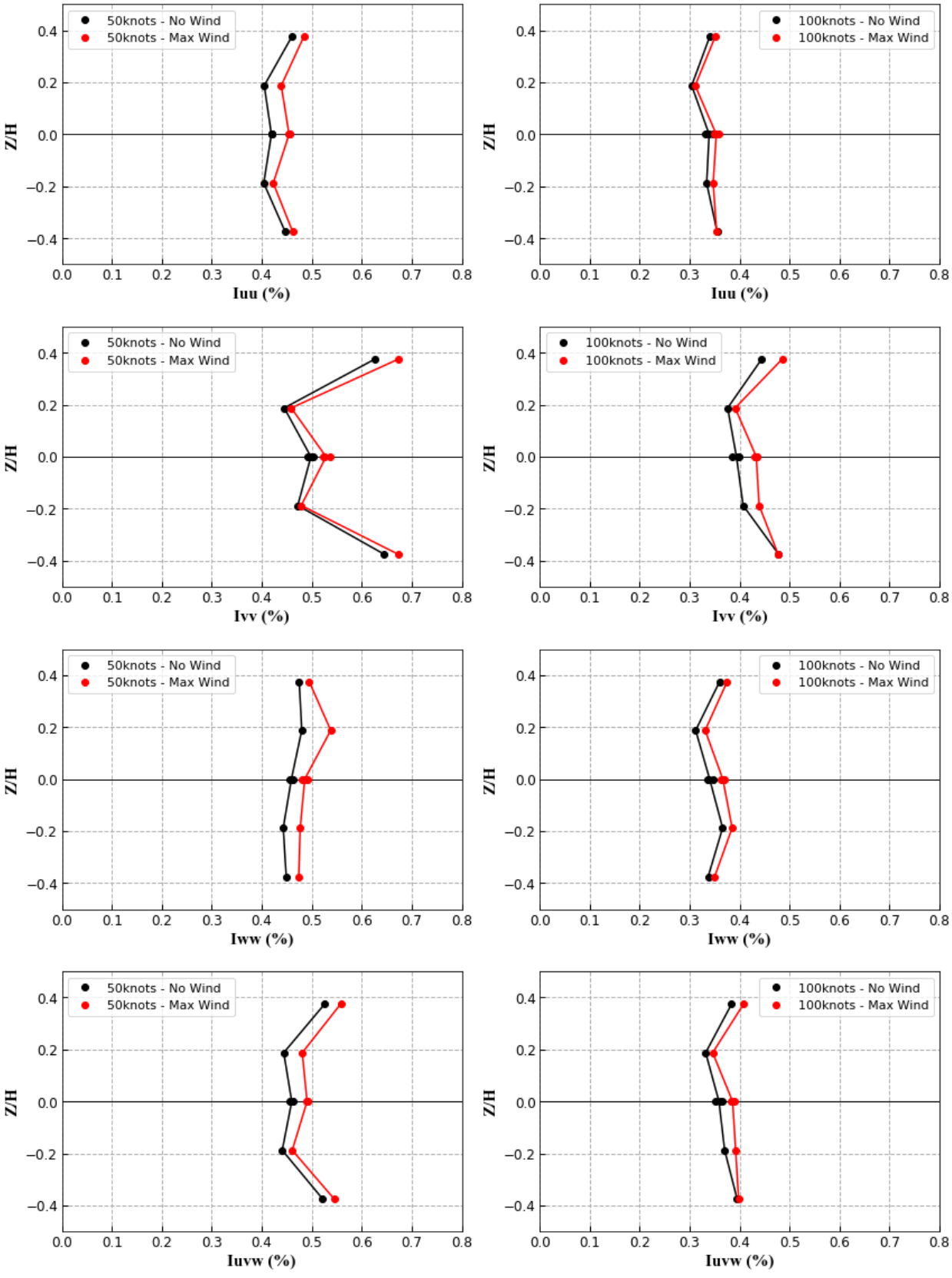
Run 140


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

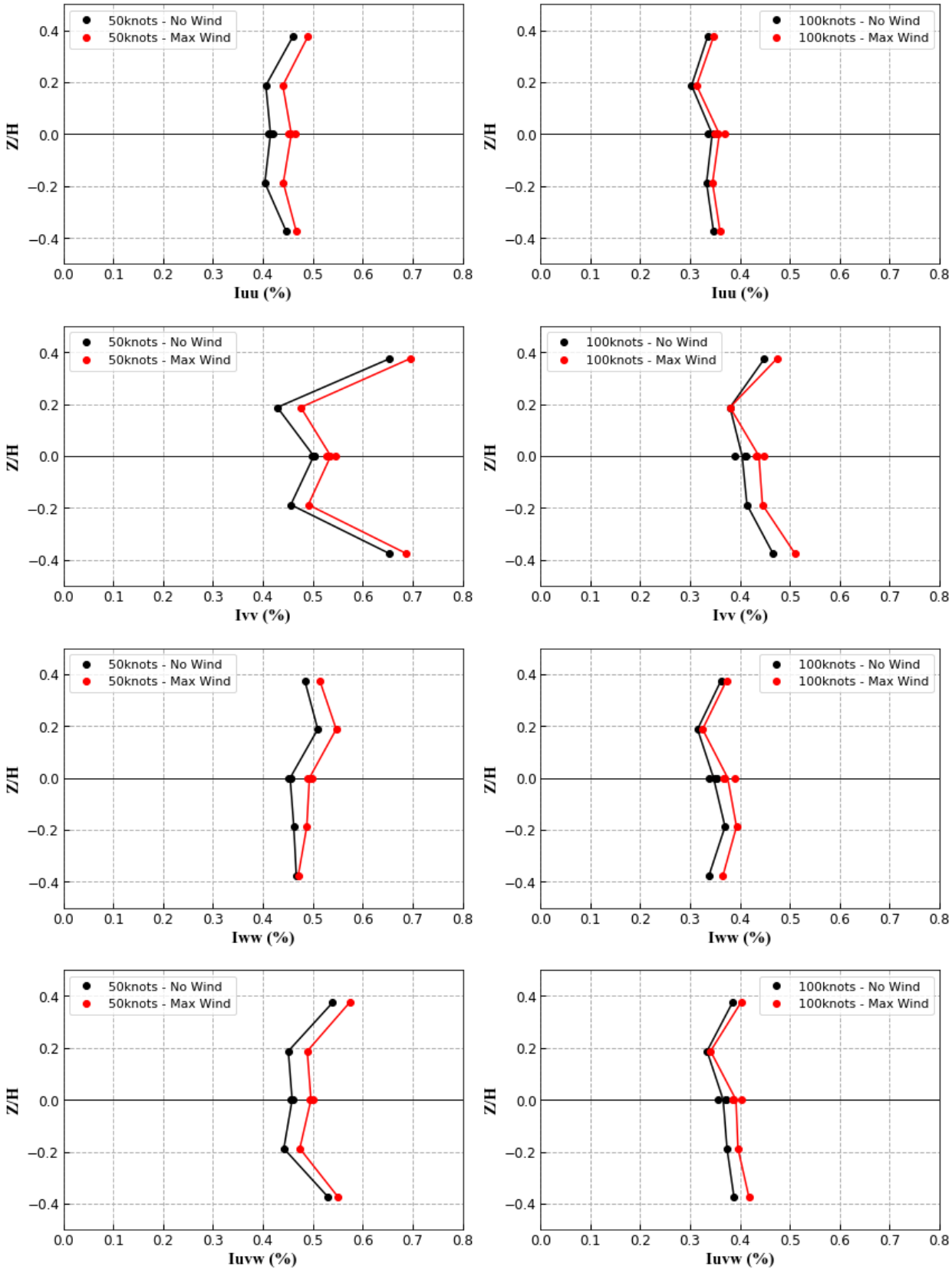
Run 141


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

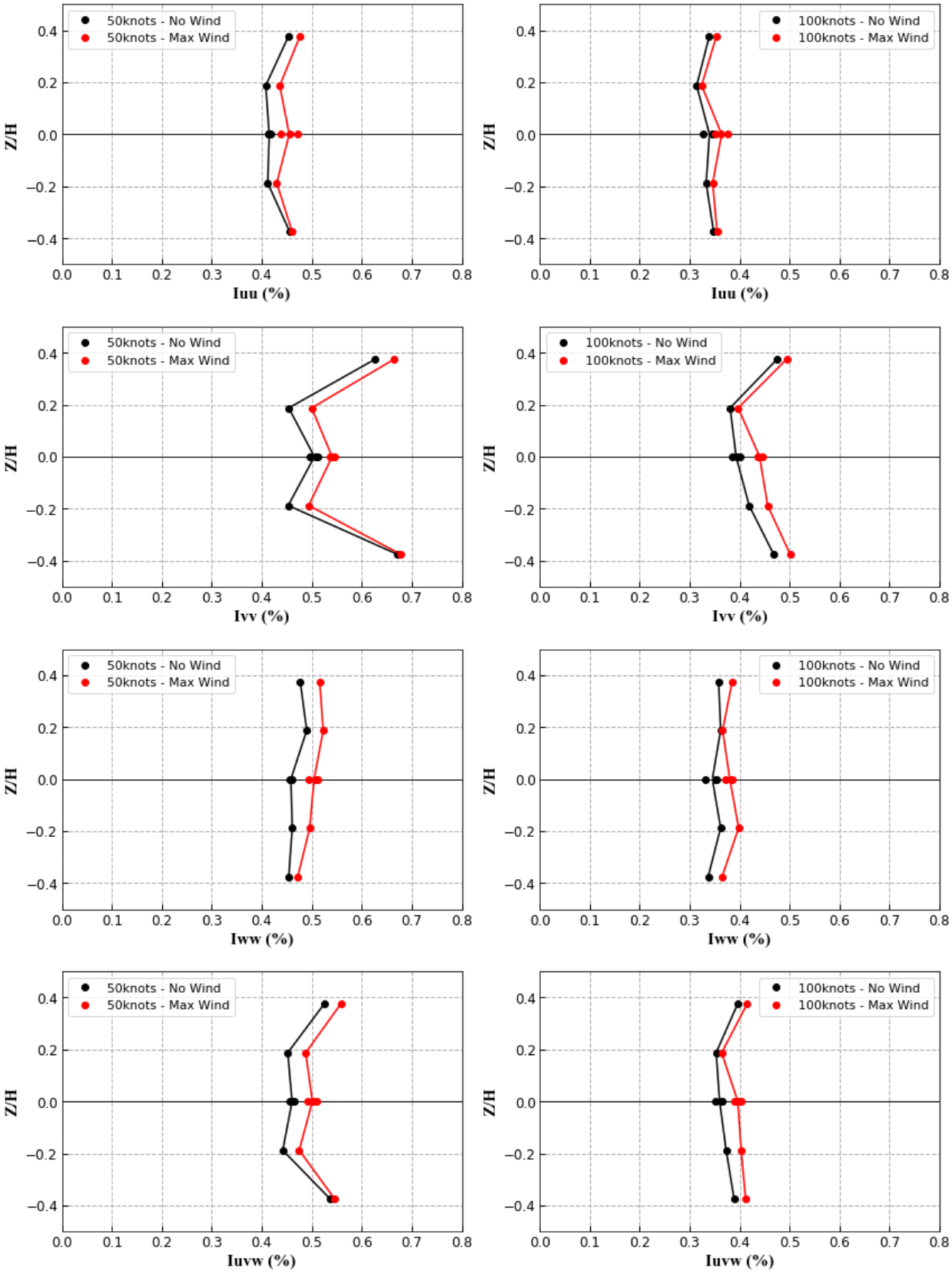
Run 142


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

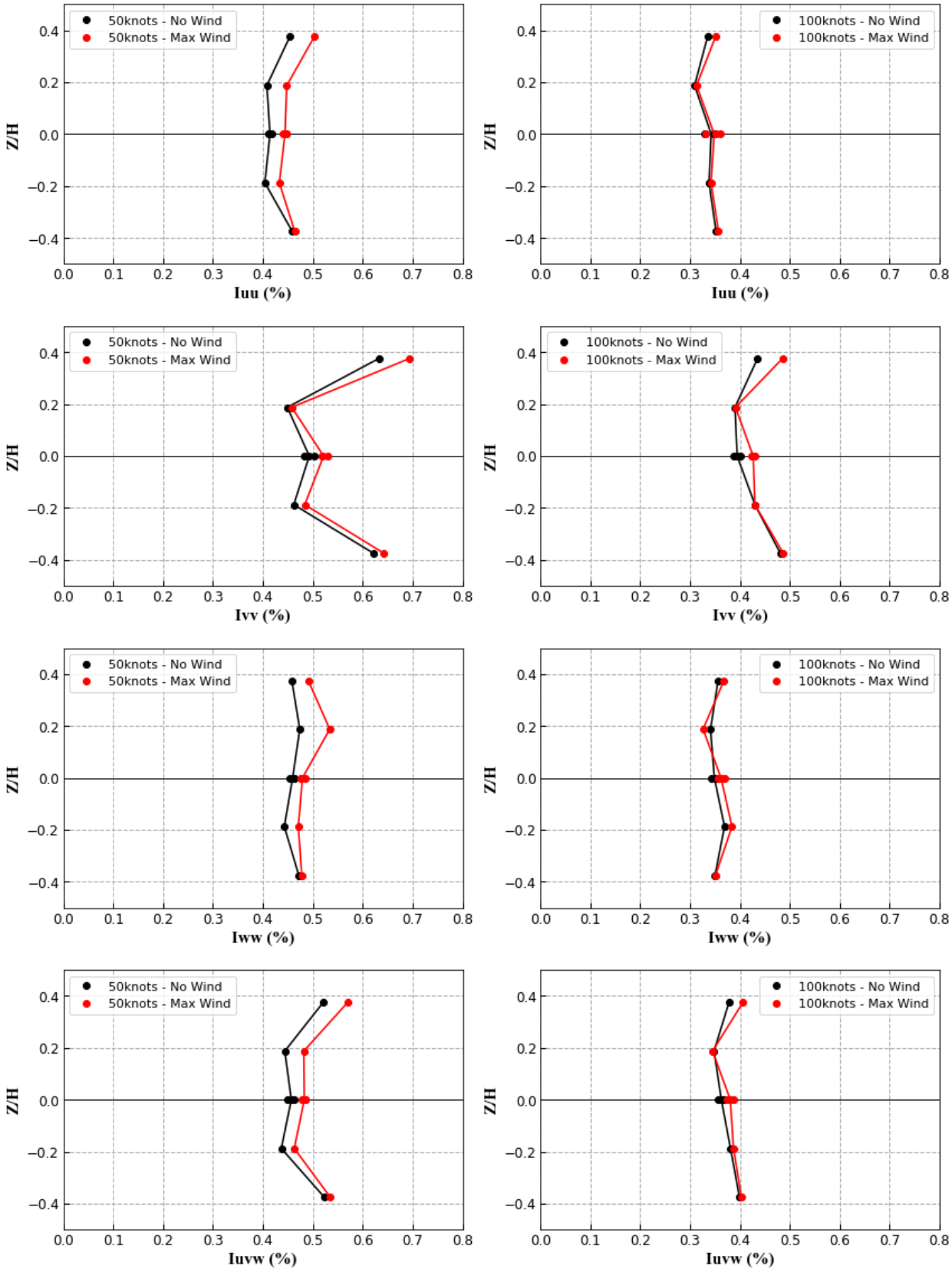
Run 143


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

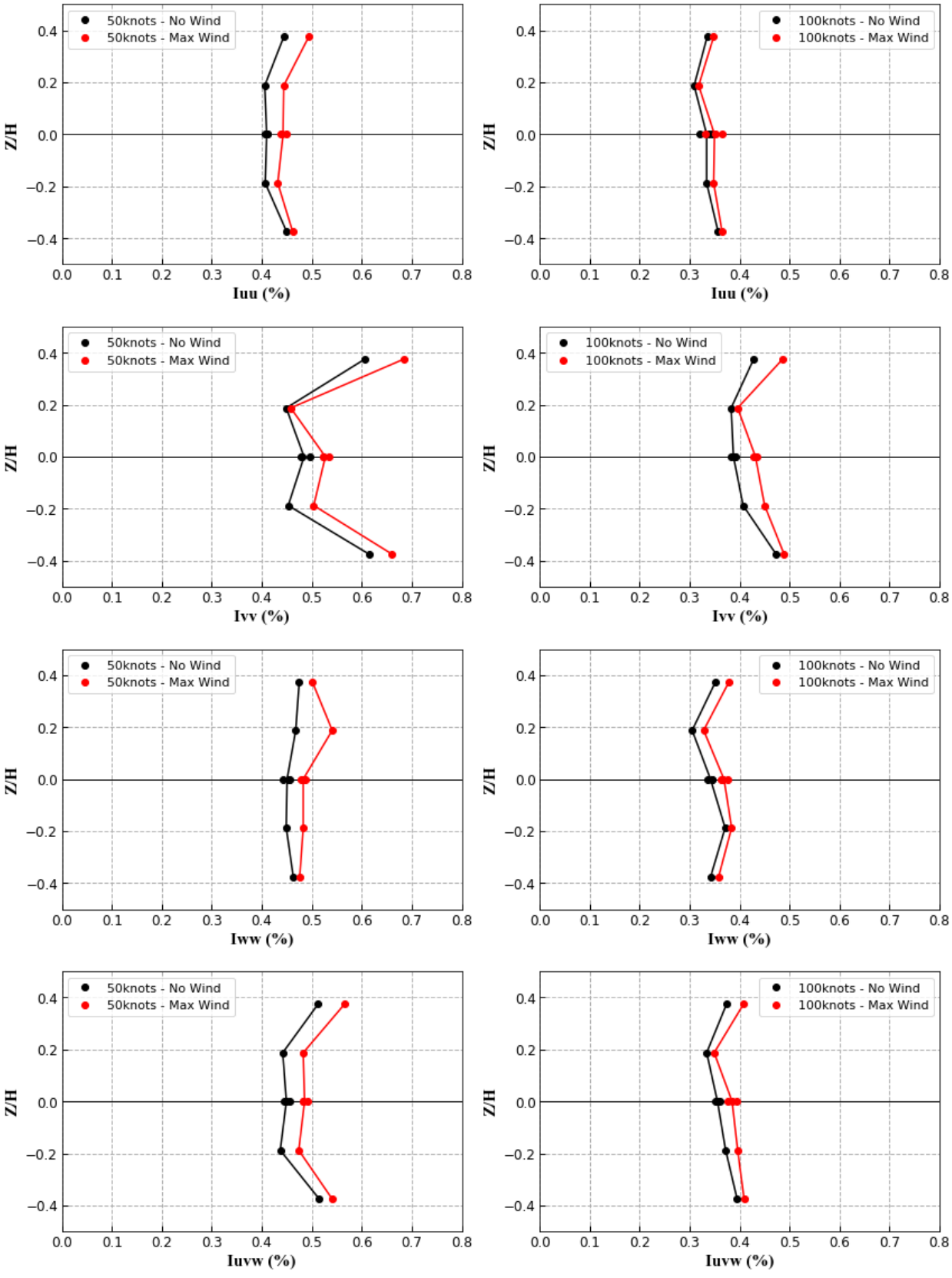
Run 144


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

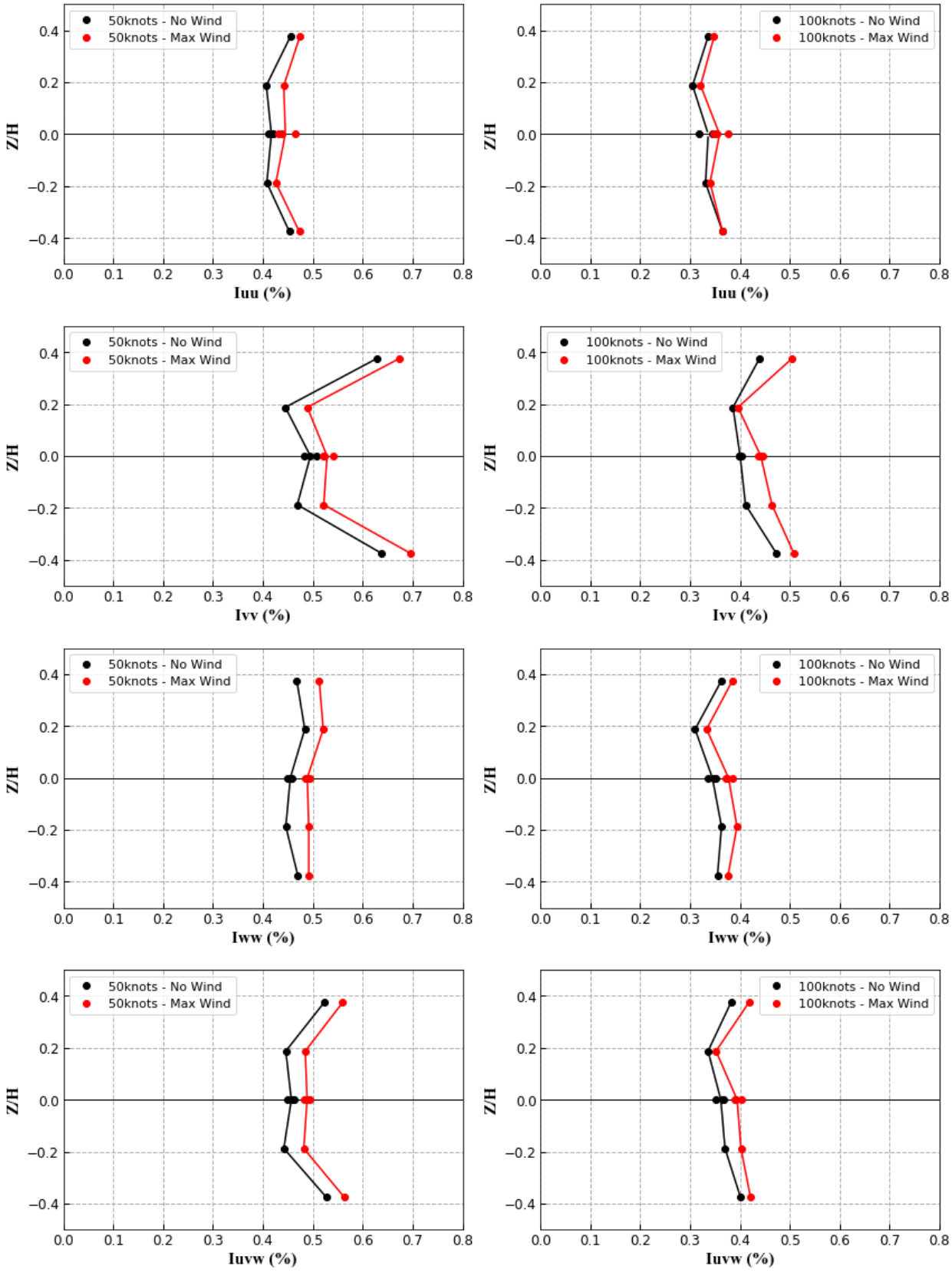
Run 145


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

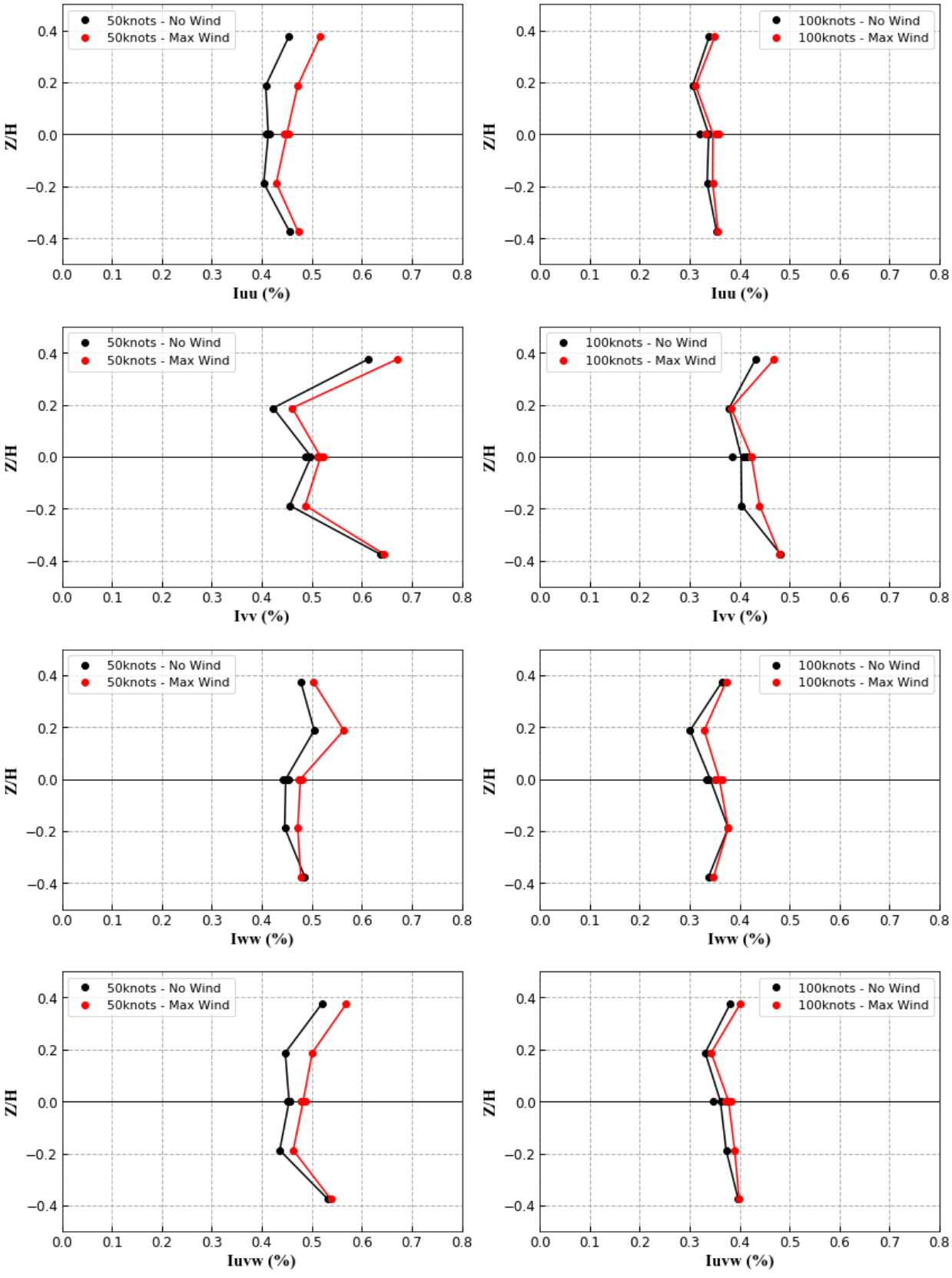
Run 146


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

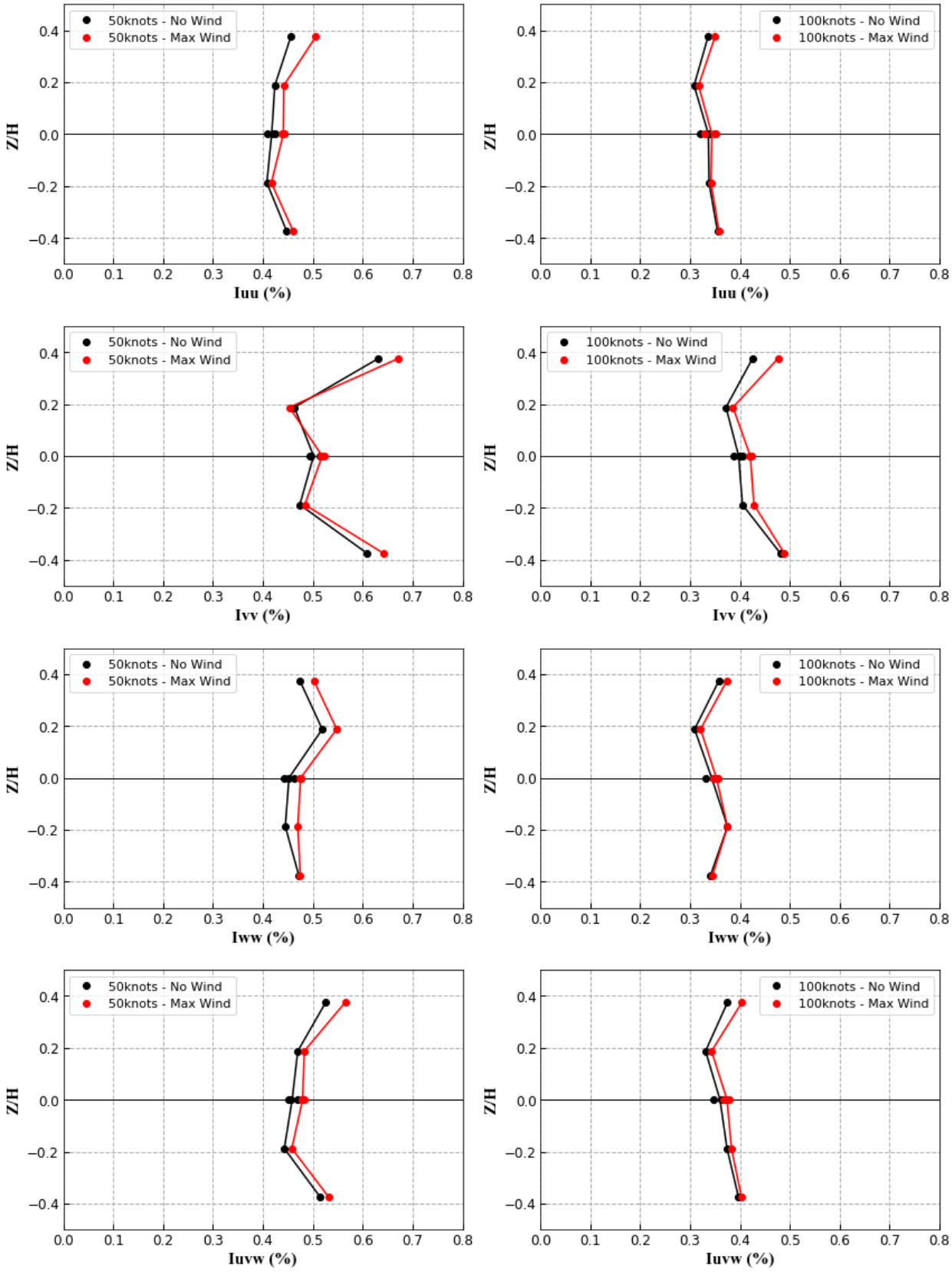
Run 148


50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

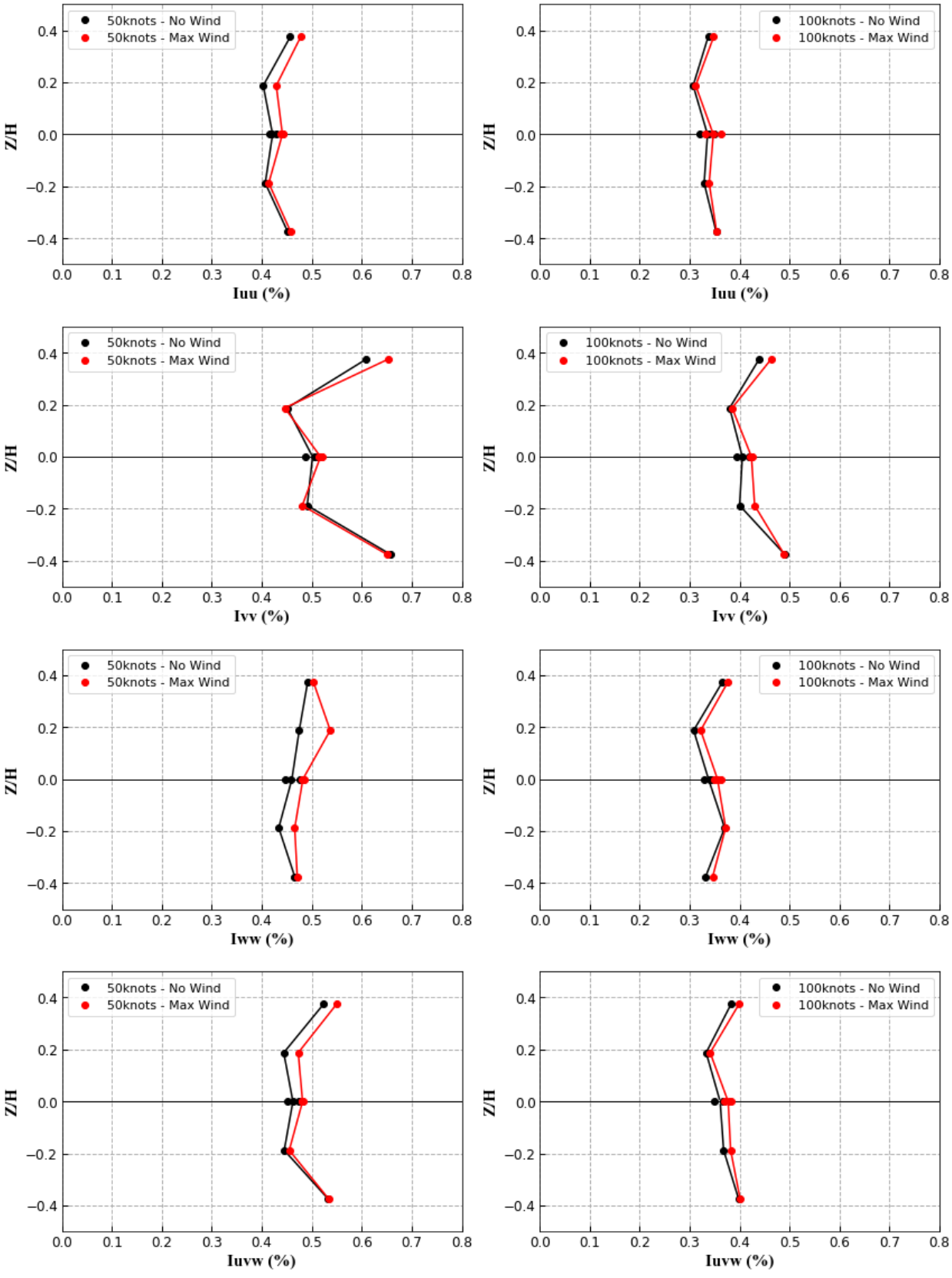
Run 149

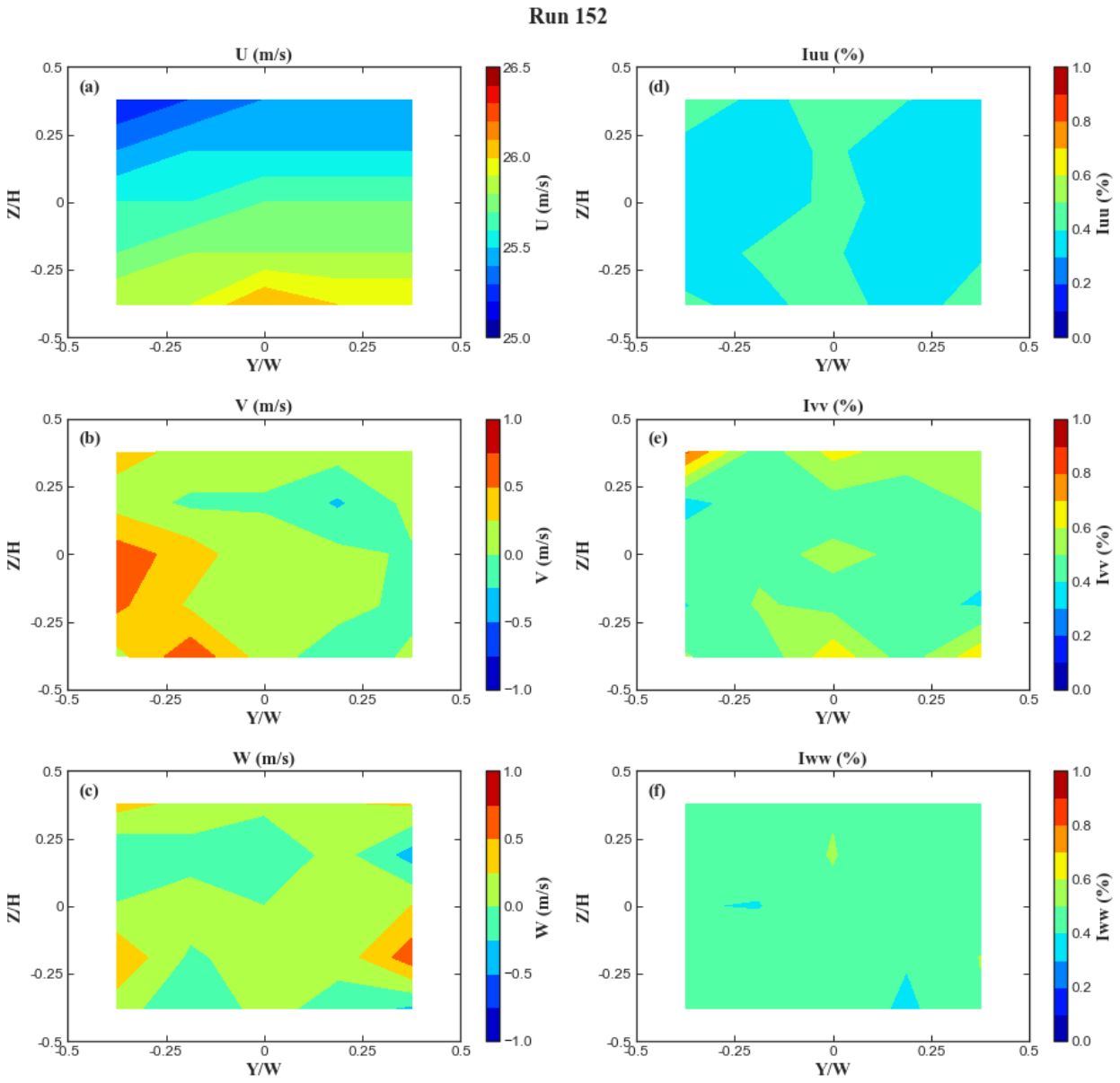

50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

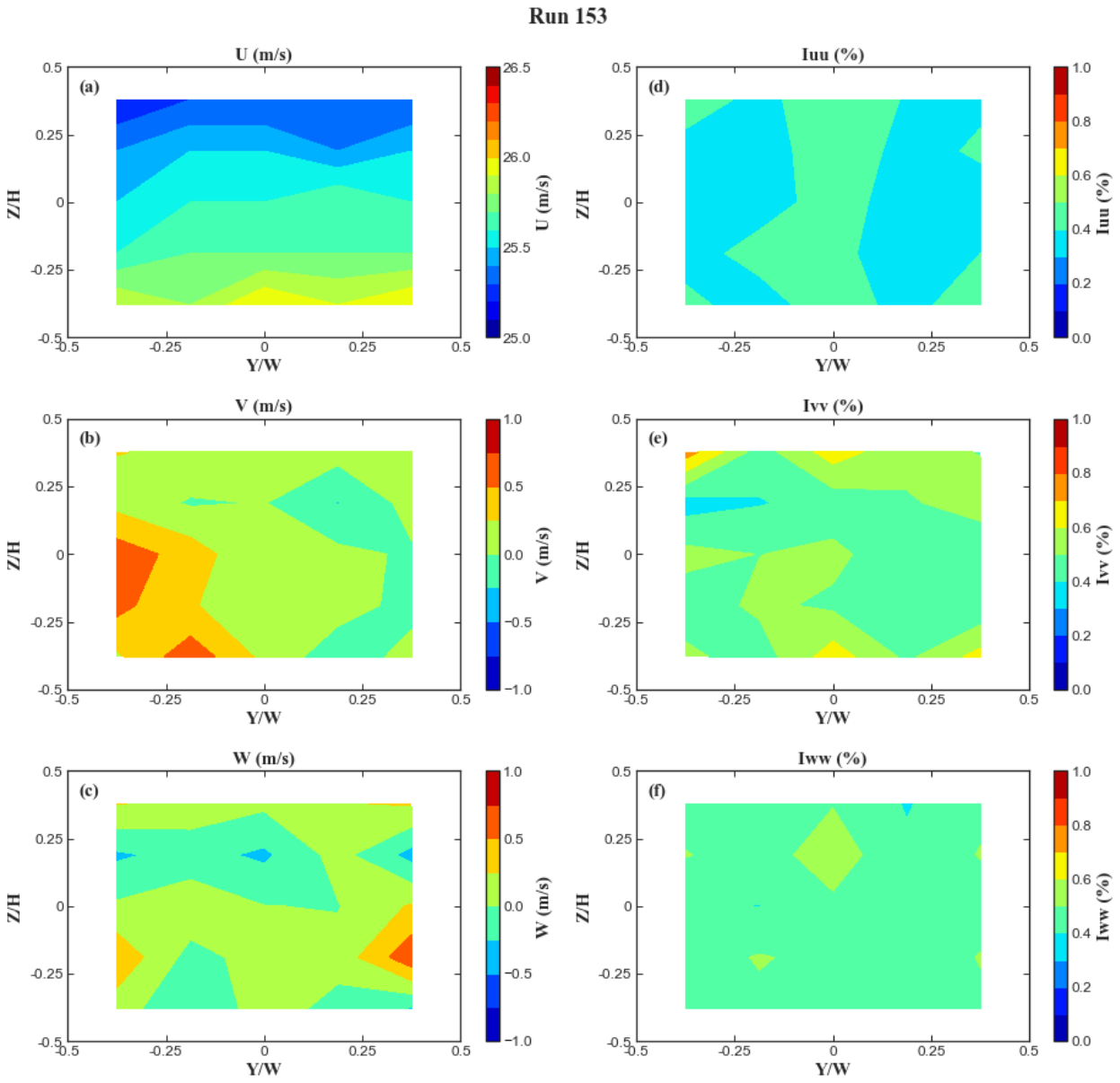
Run 150

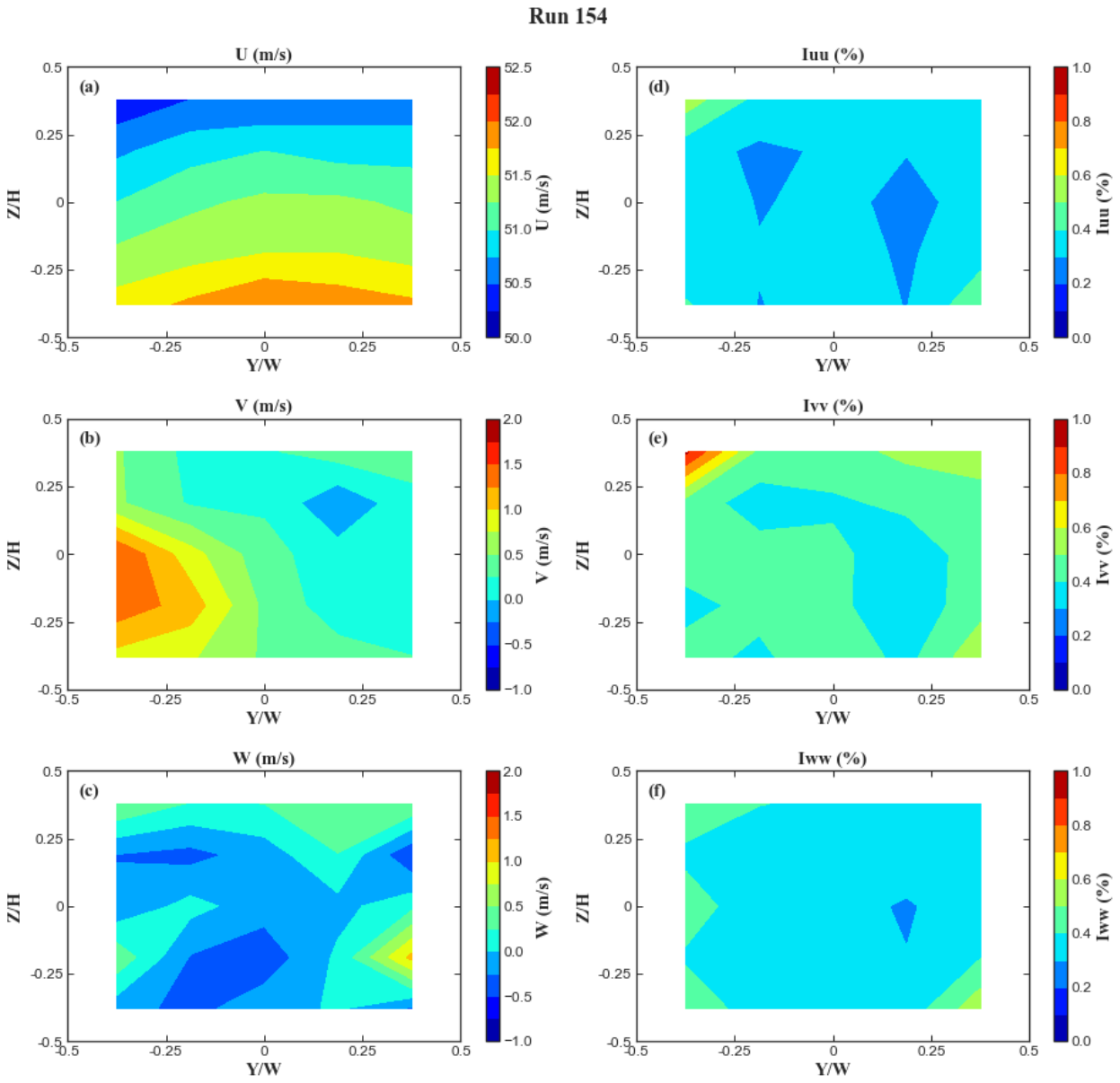

50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

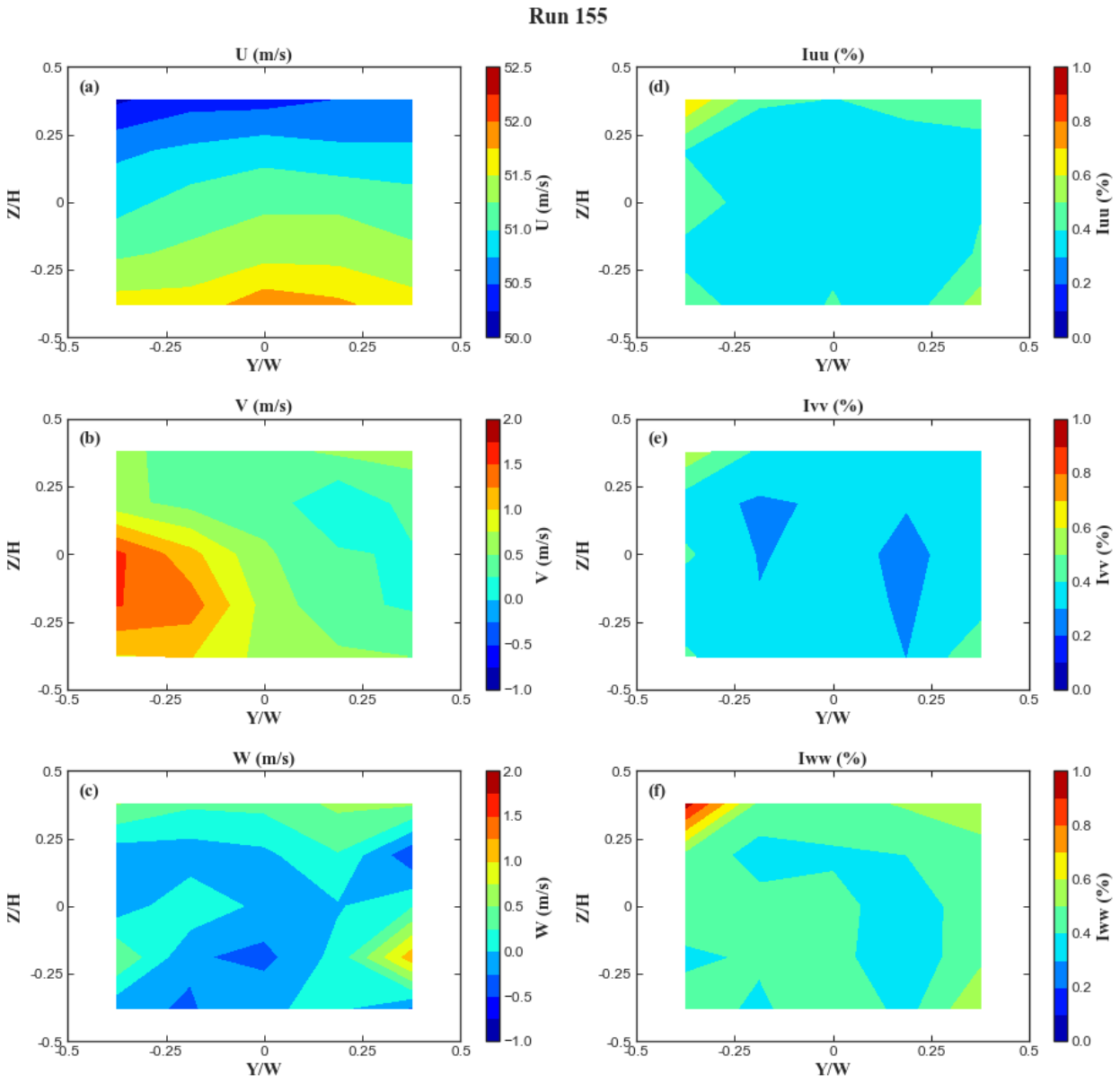
Run 151

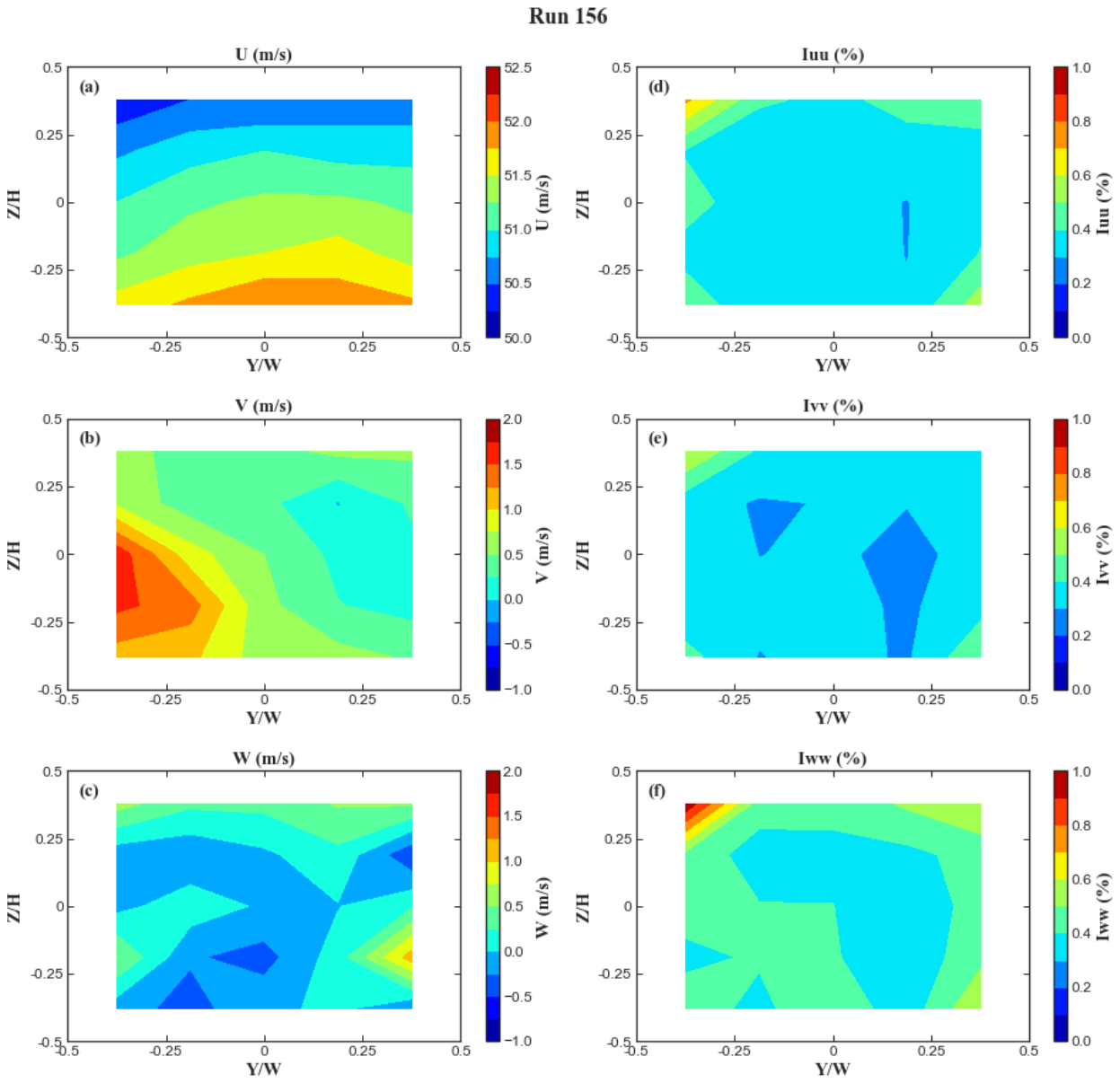

50knots - No Wind
50knots - Max Wind
100knots - No Wind
100knots - Max Wind
Z/H
Iuu (%)
Ivv (%)
Iww (%)
Iuvw (%)

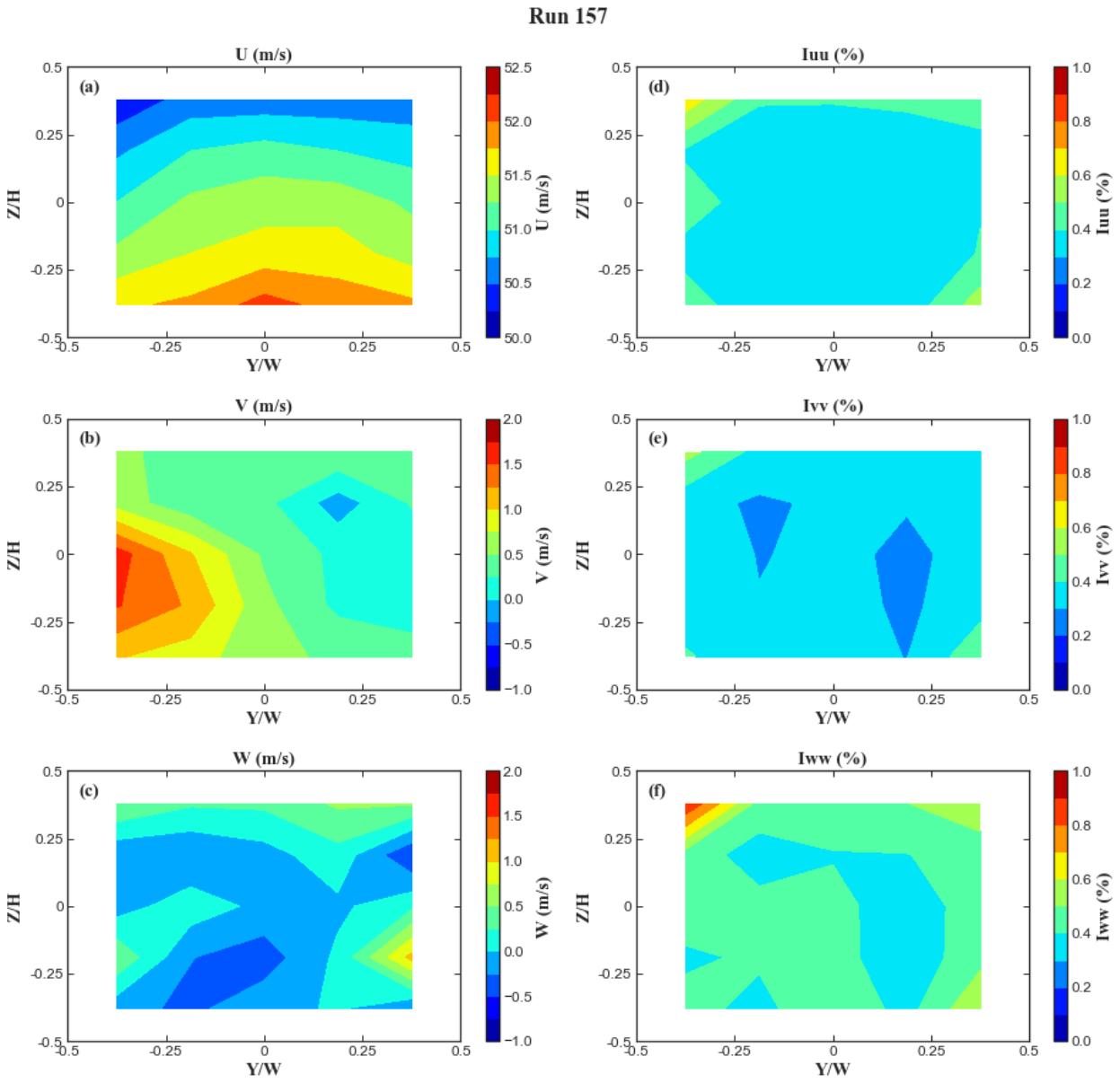

Run 152
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

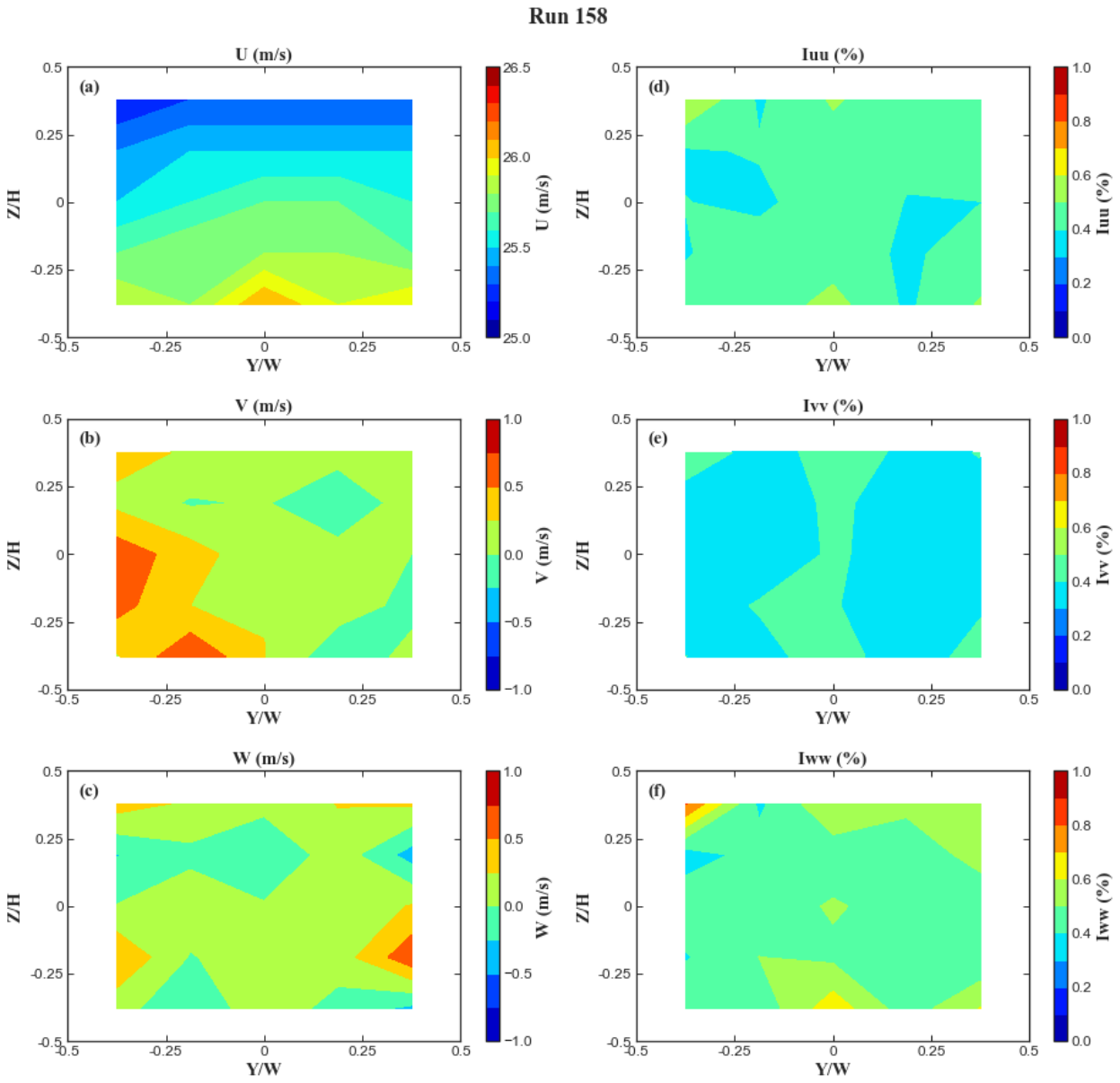

Run 153
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

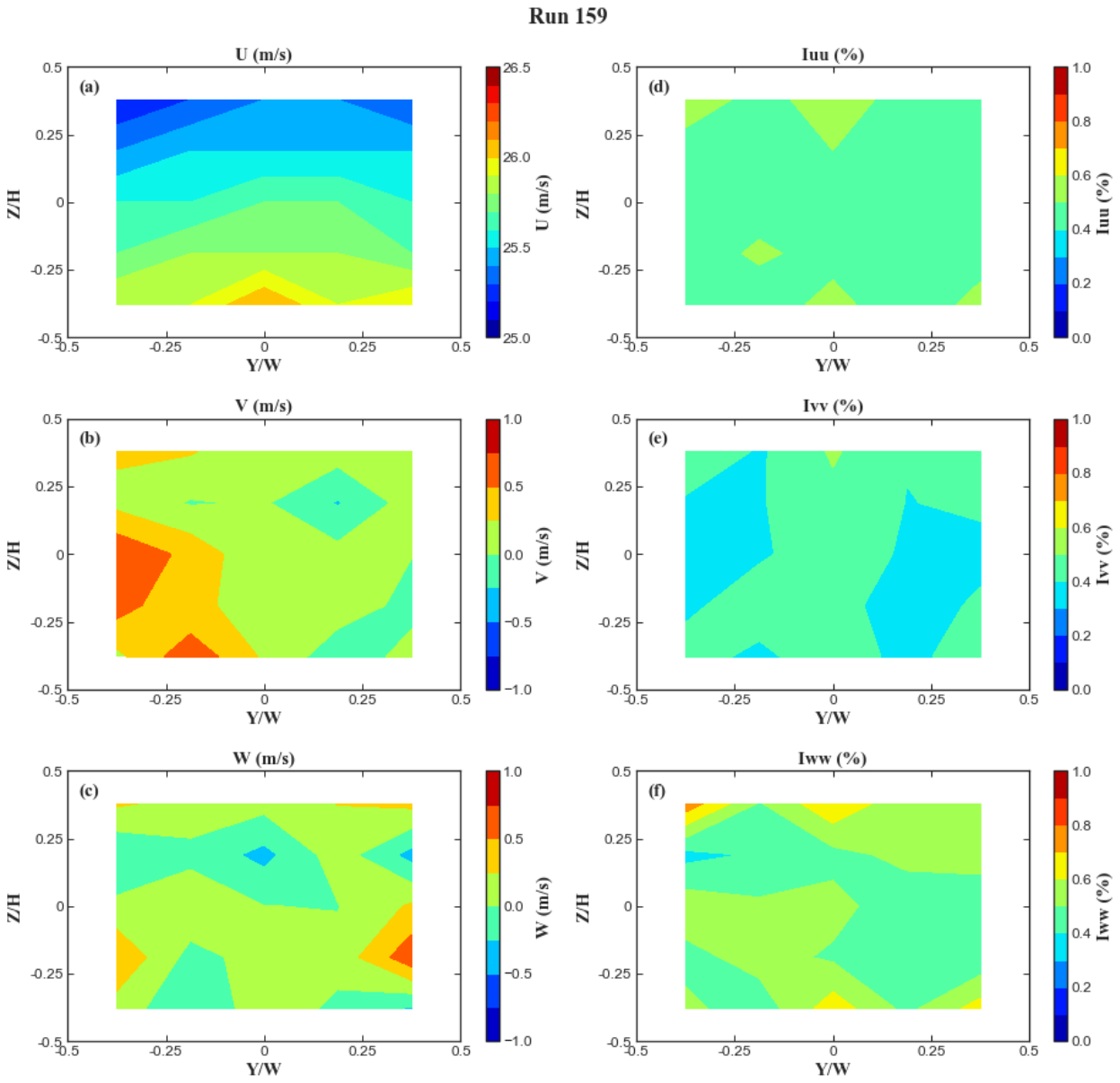

Run 154
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

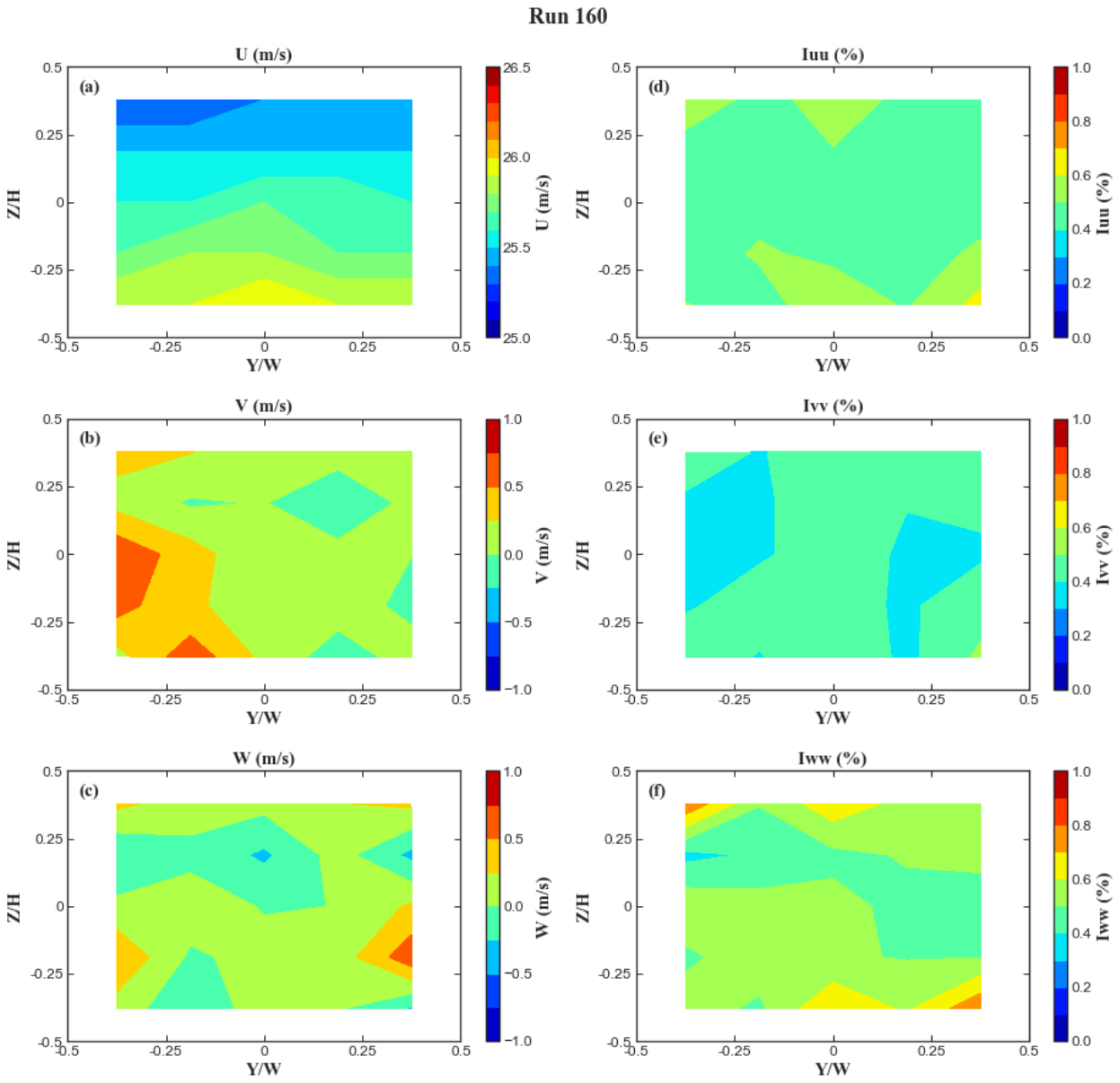

Run 155
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

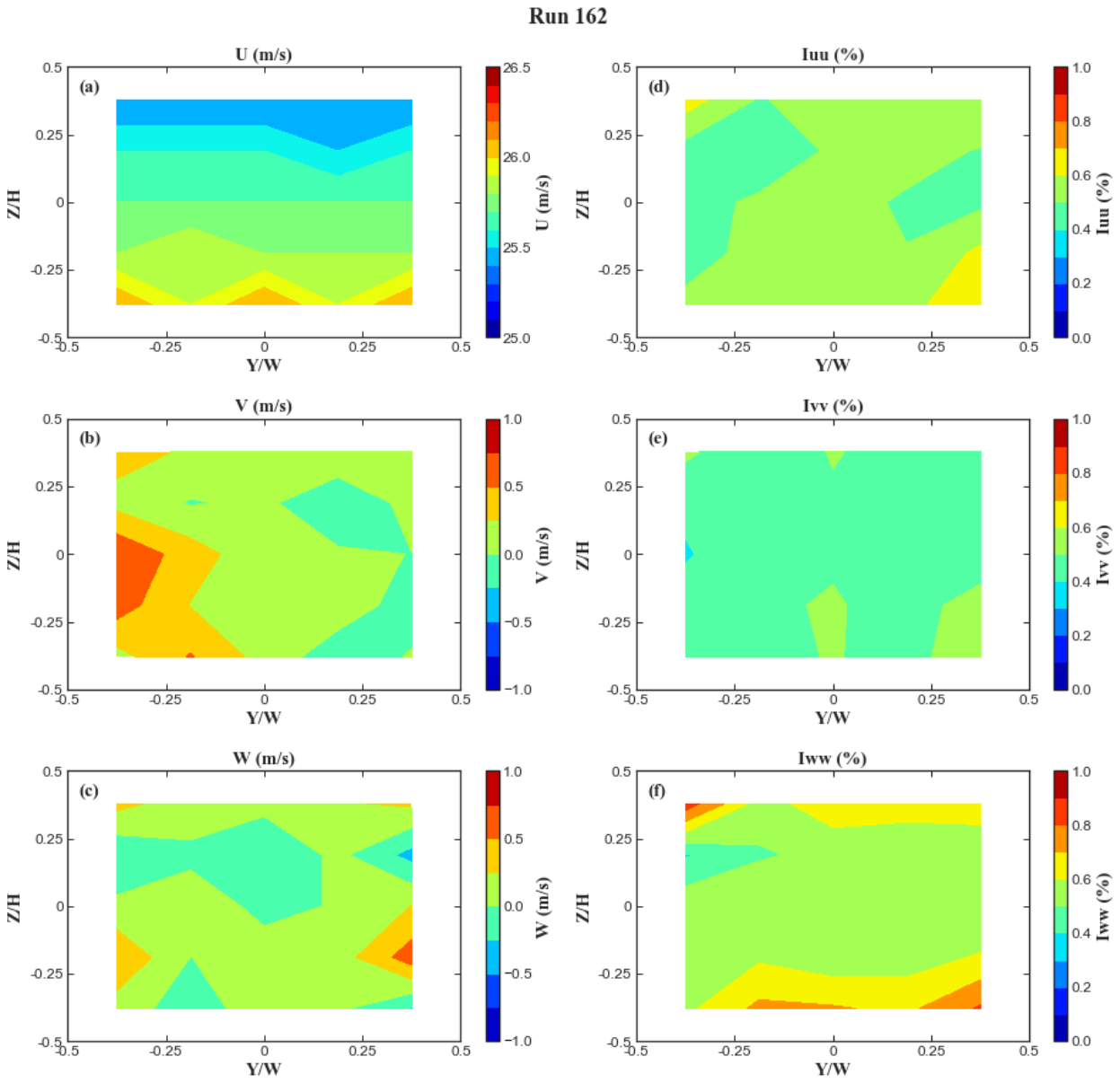

Run 156
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

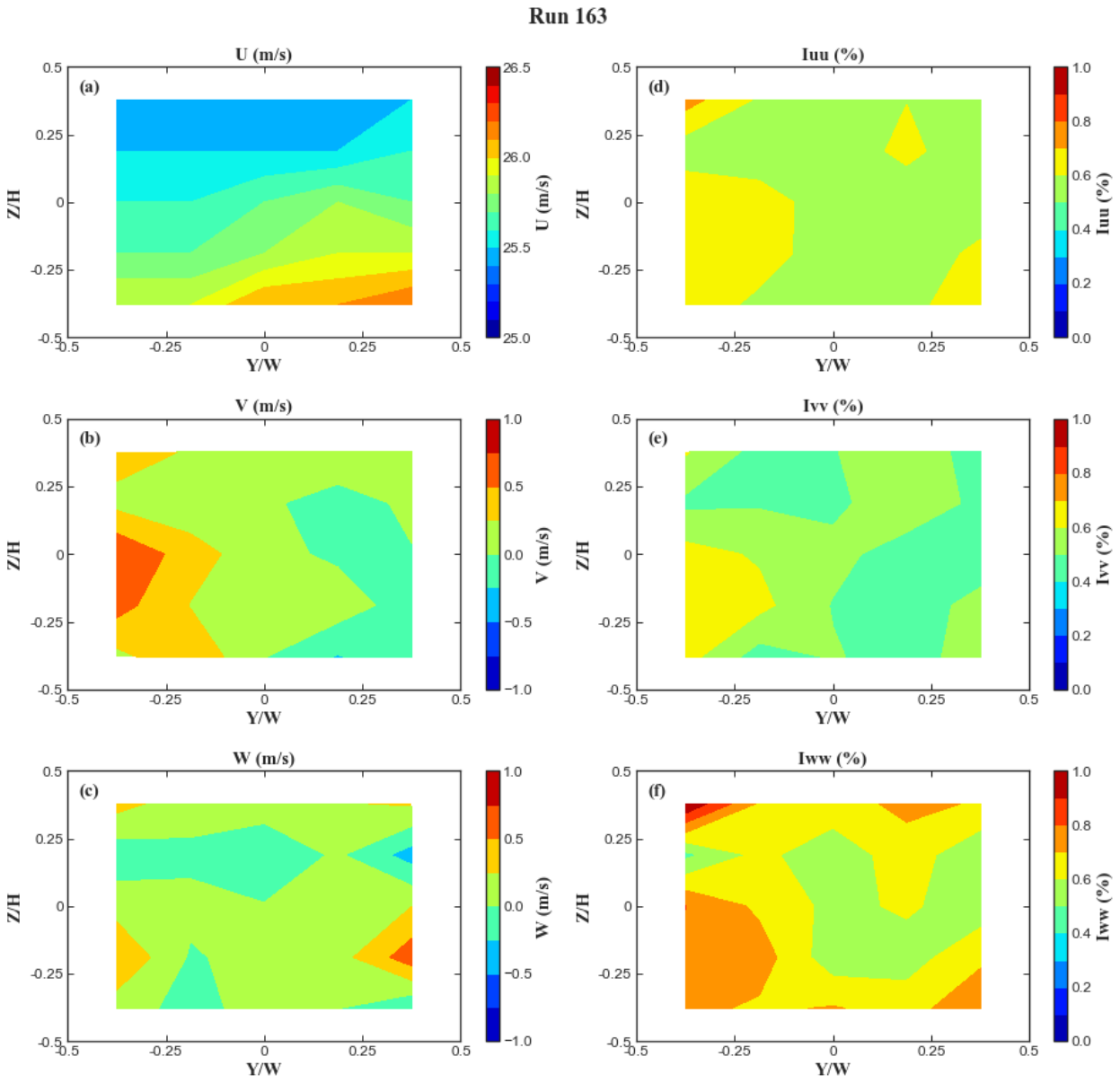

Run 157
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

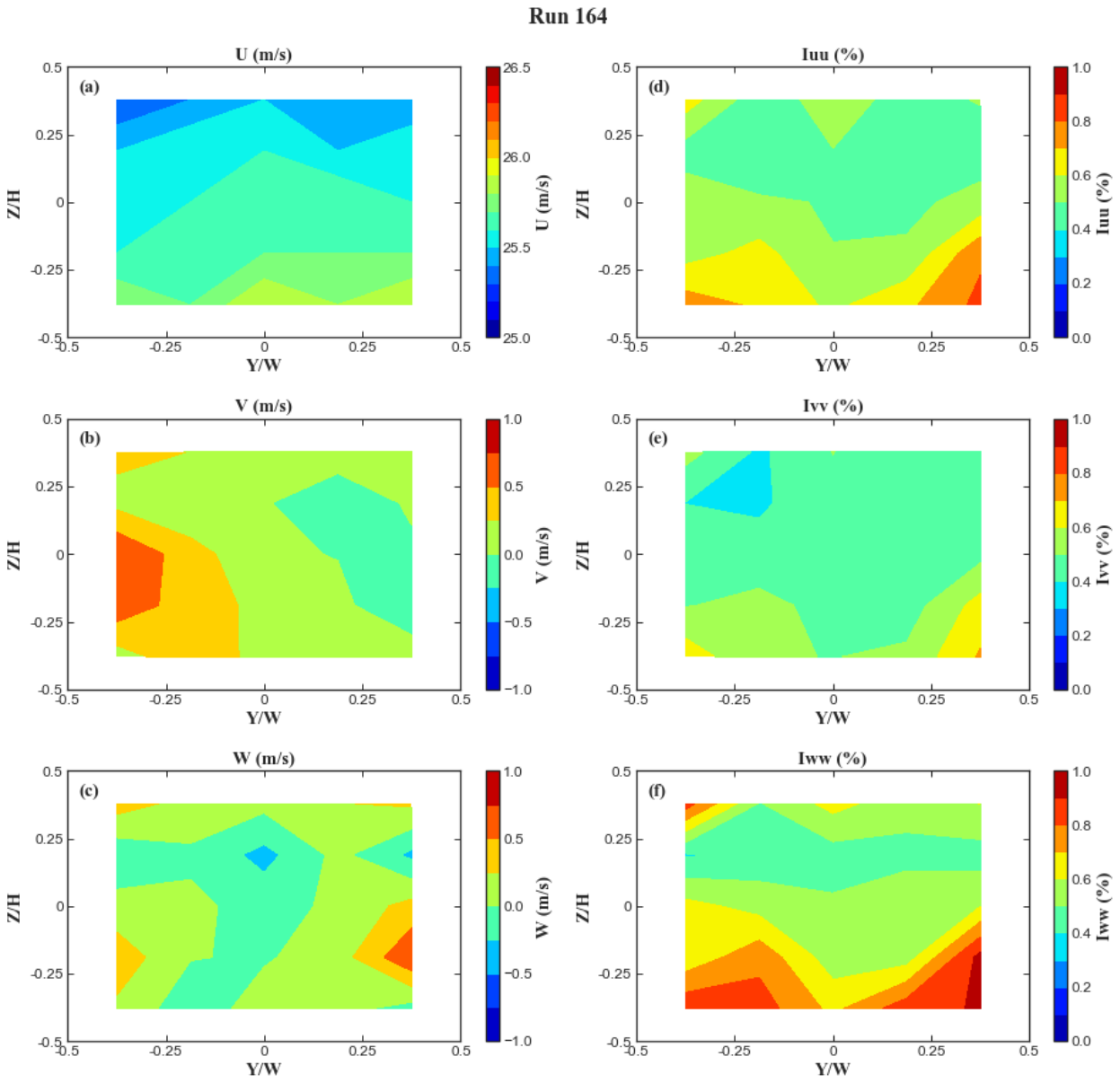

Run 158
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

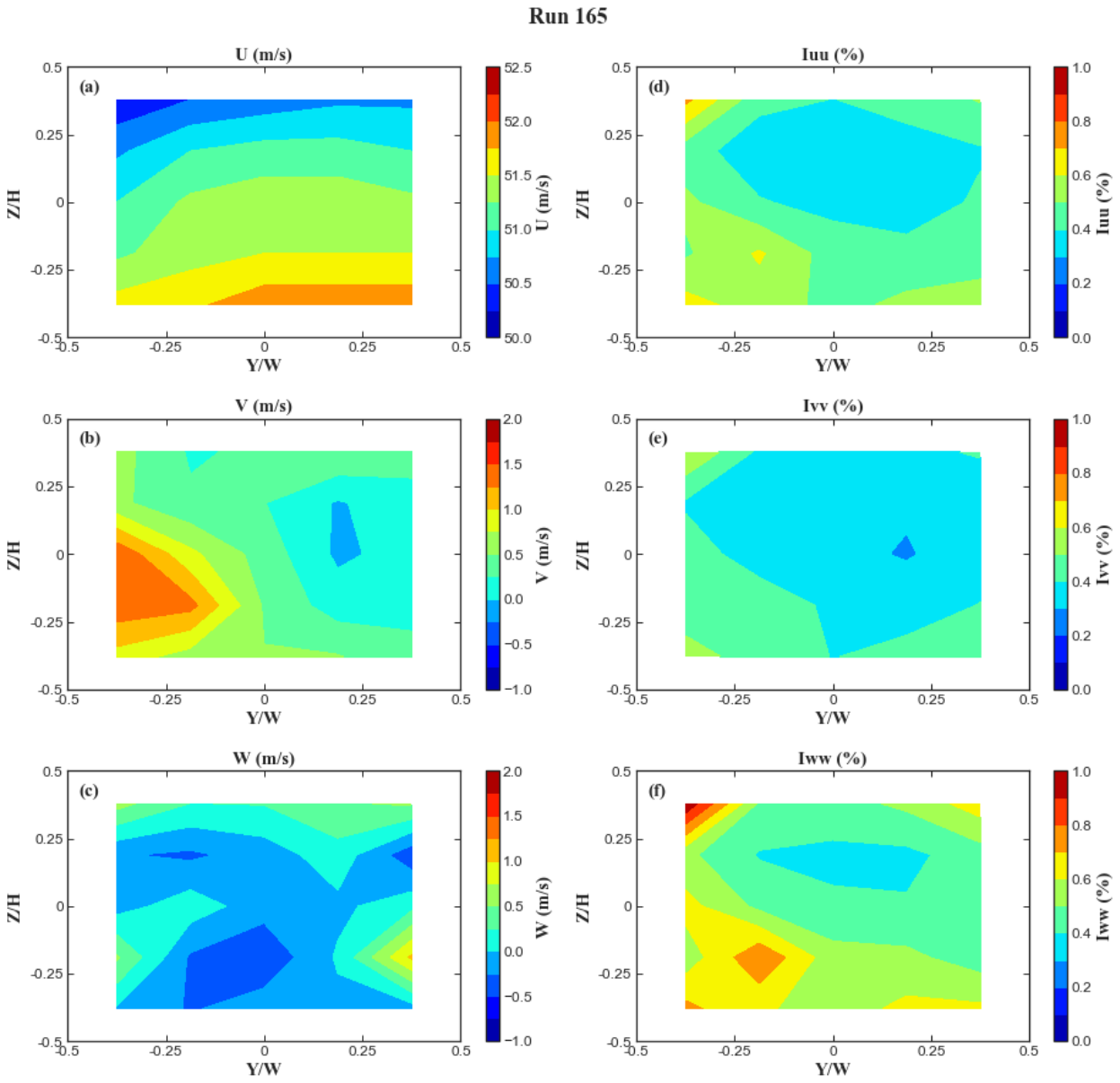

Run 159
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

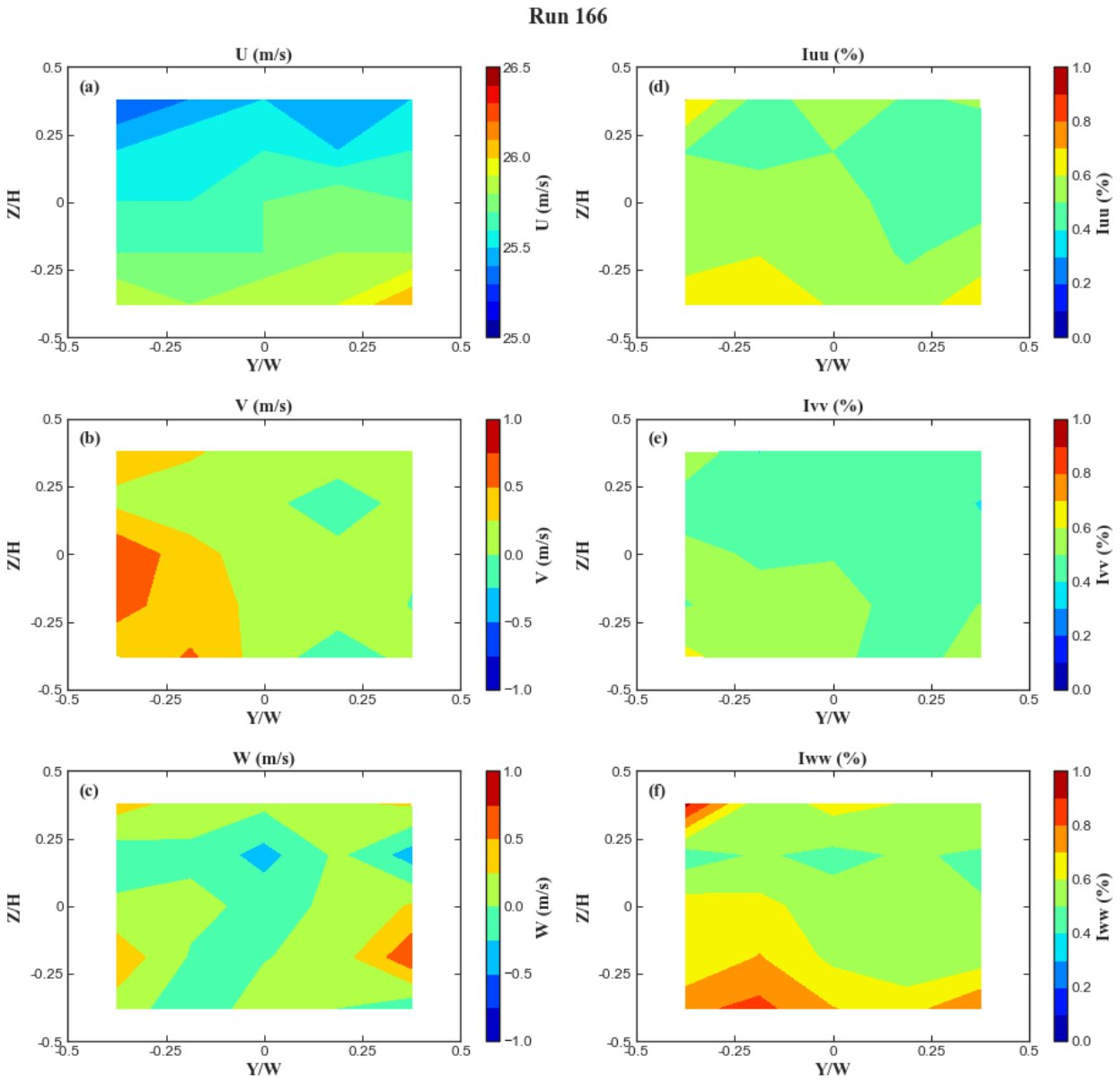

Run 160
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

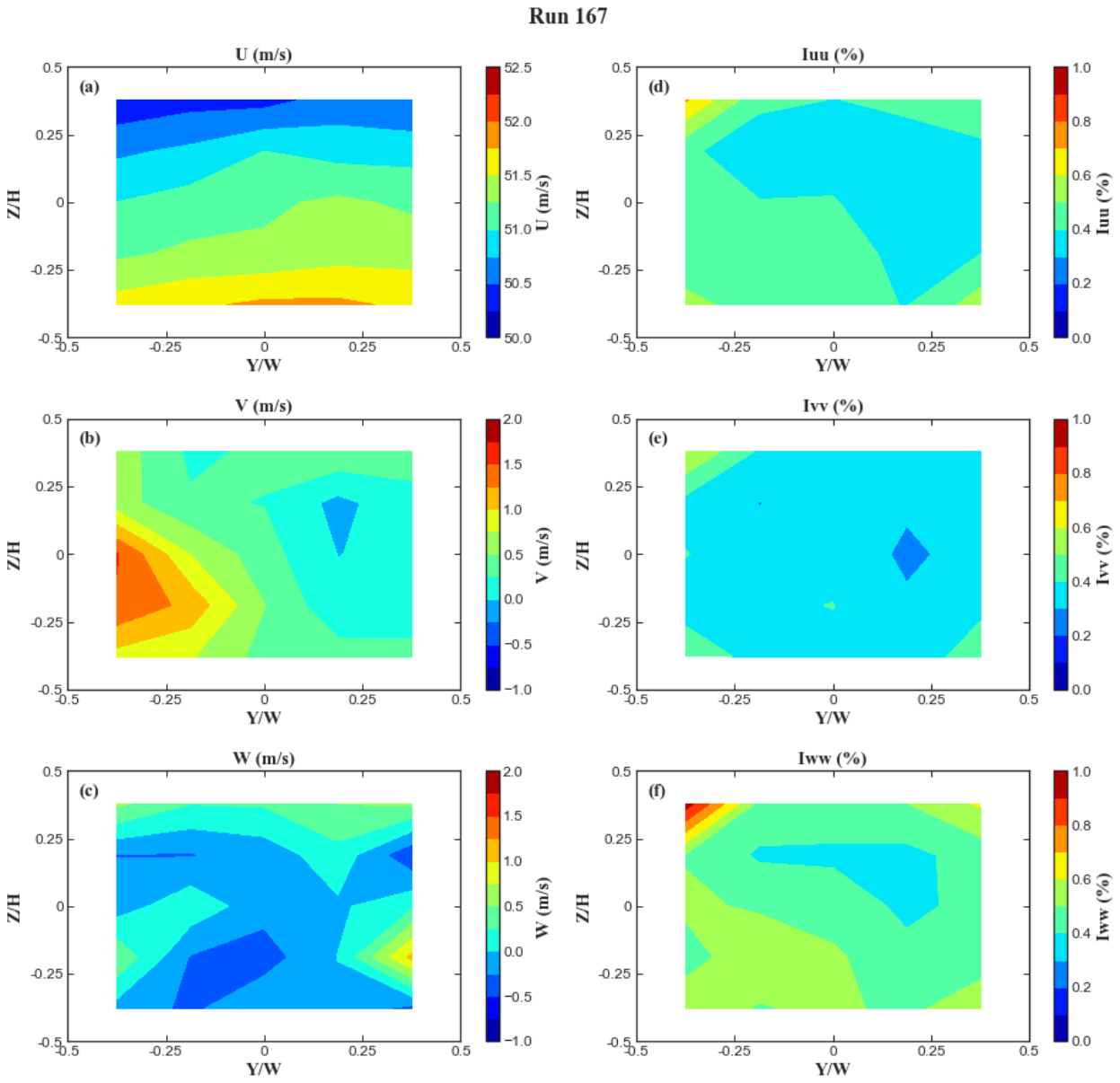

Run 162
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

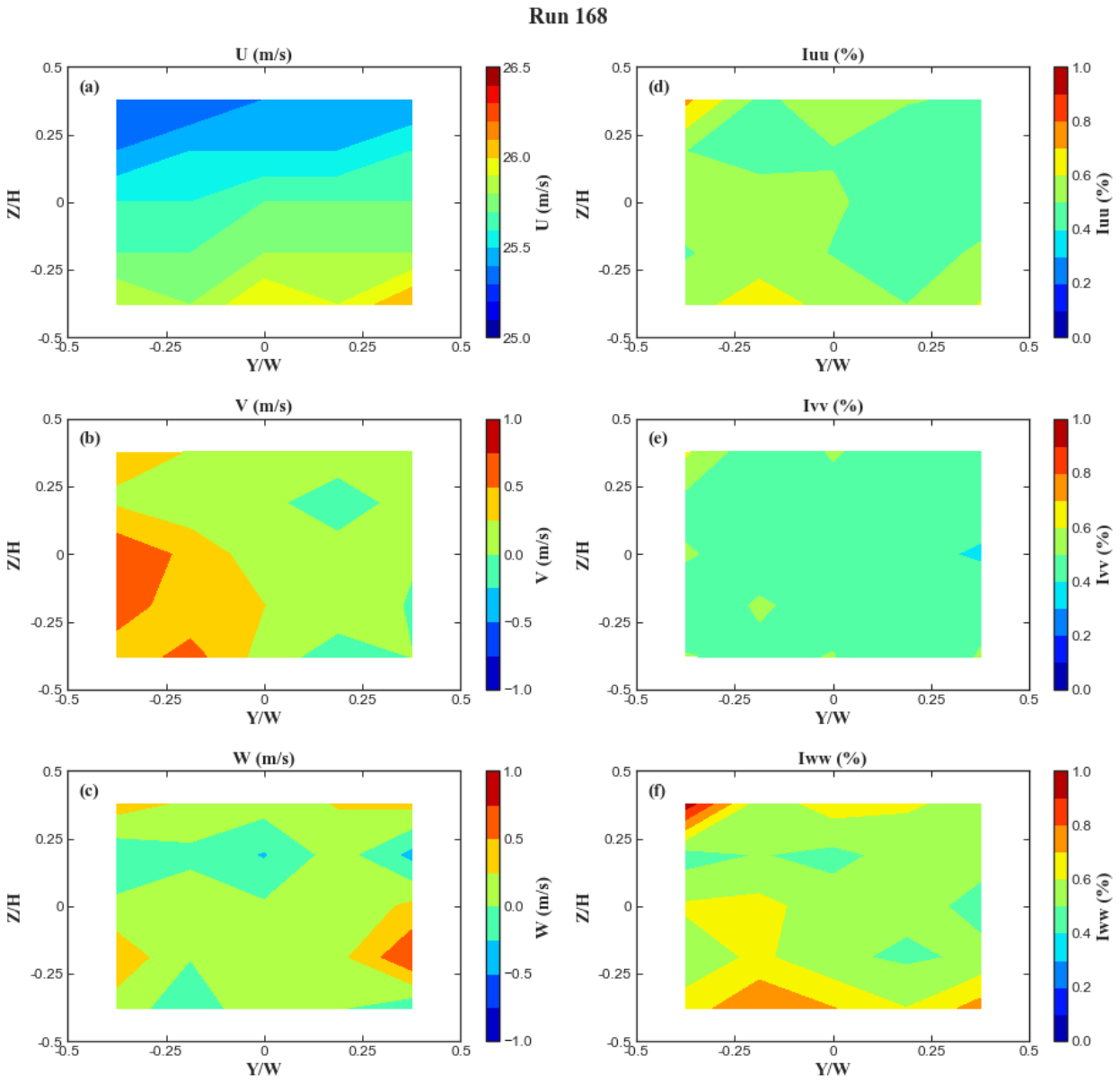

Run 163
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

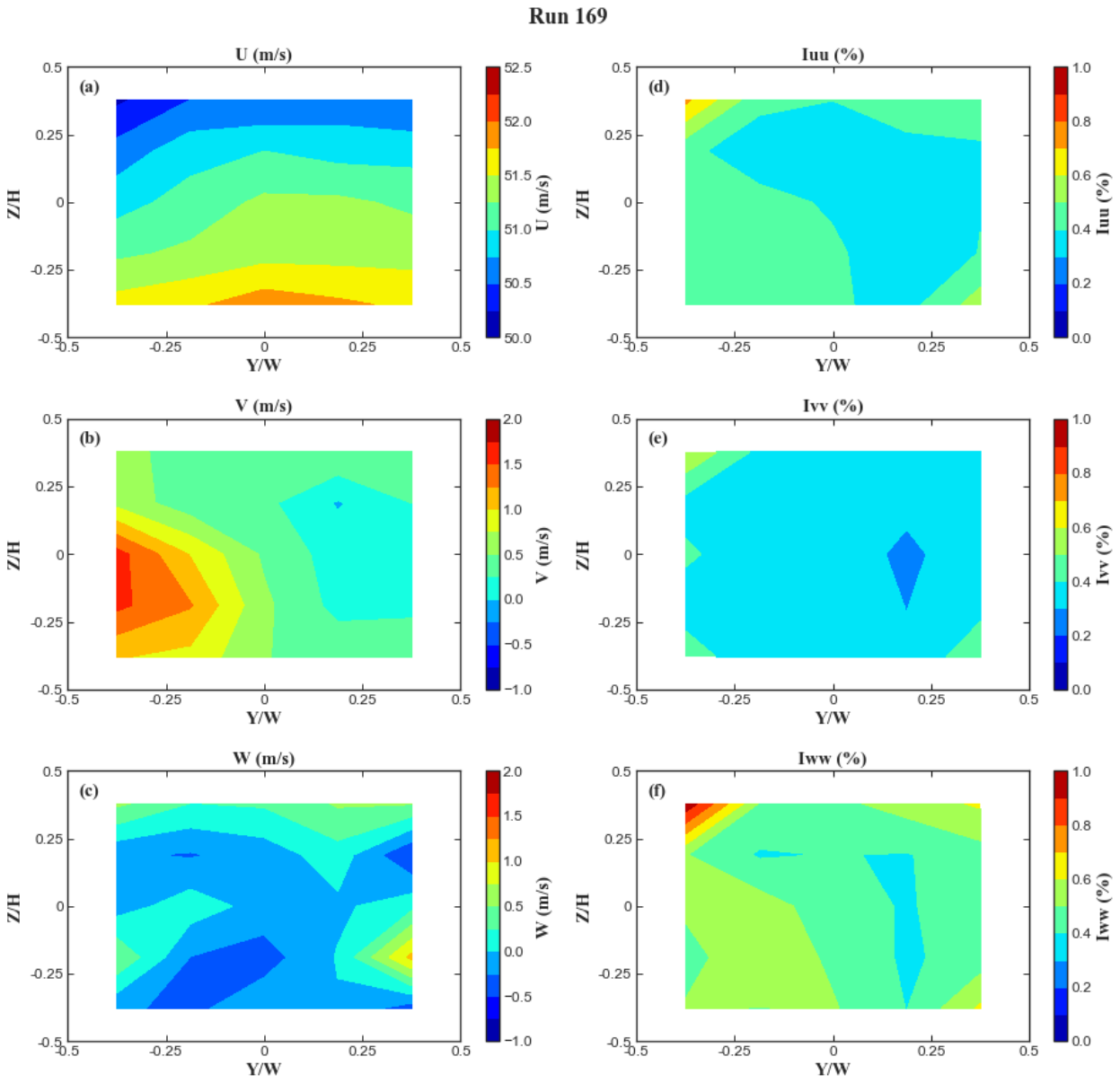

Run 164
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)


Run 165
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

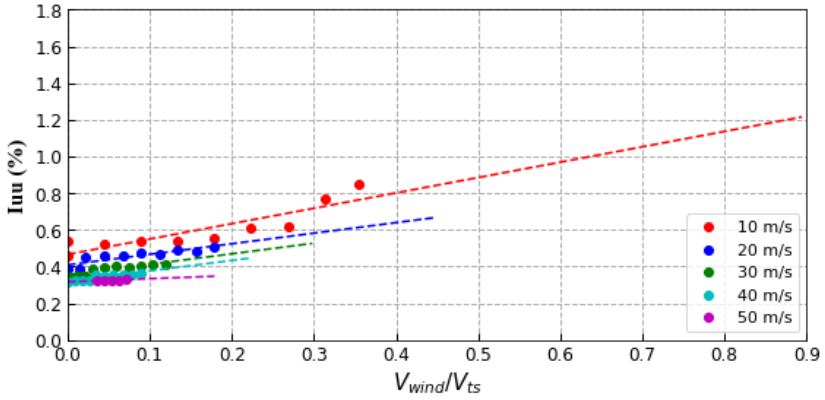

Run 166
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

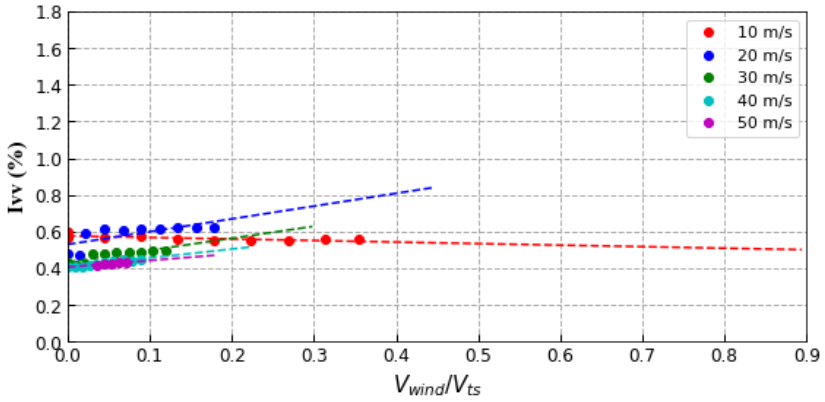

Run 167
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

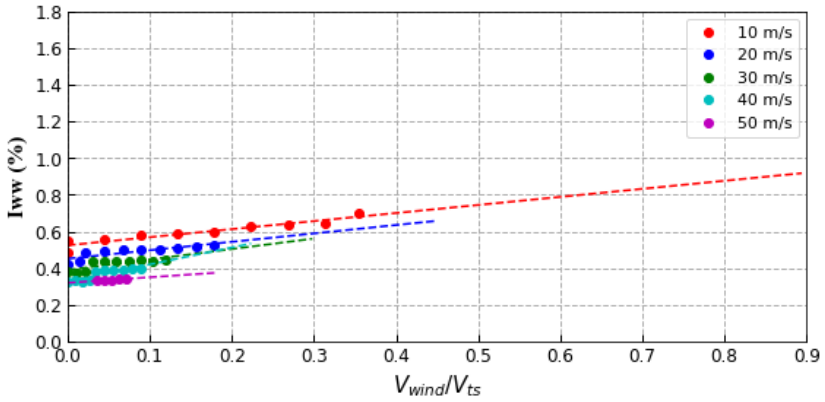

Run 168
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

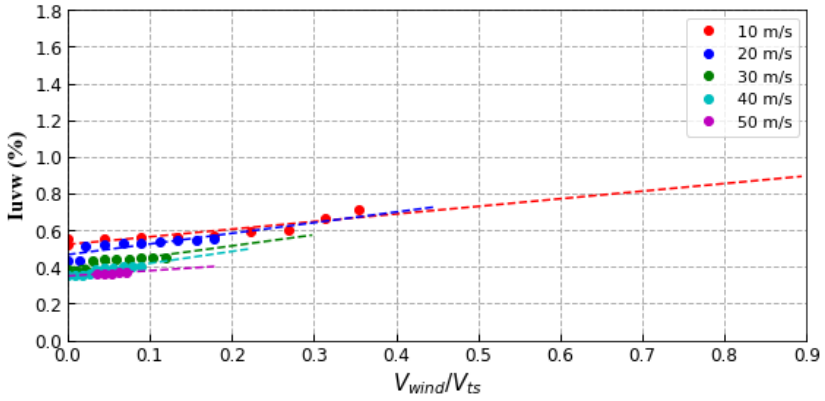

Run 169
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

Run 170

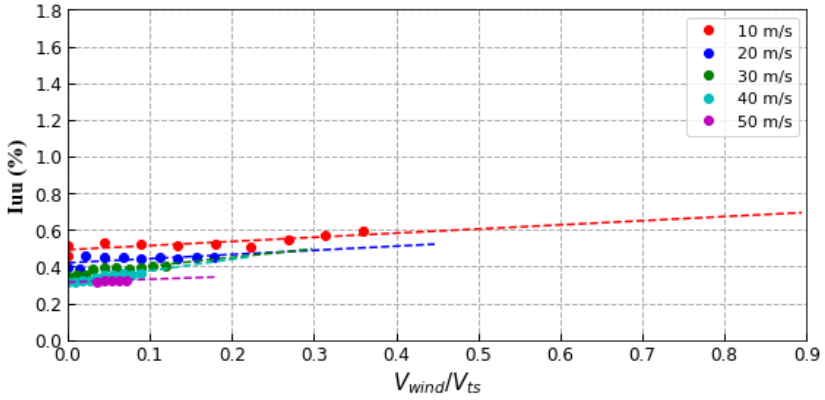

Iuu (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

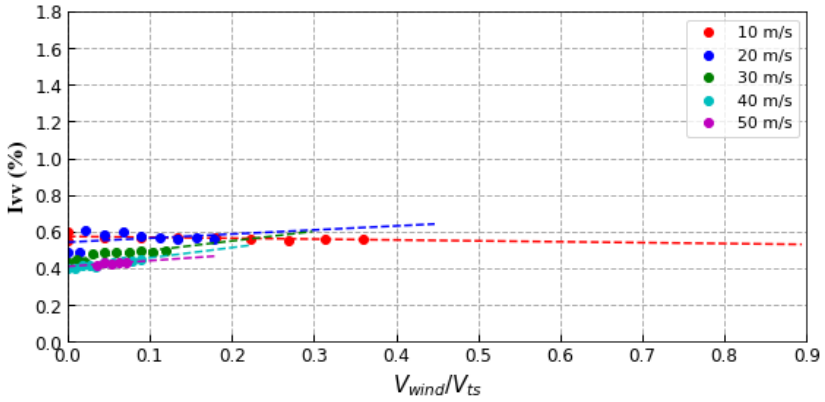

Ivv (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

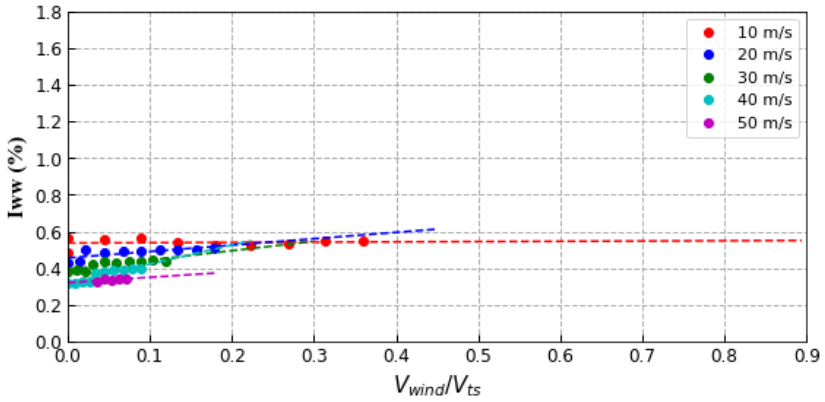

Iww (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

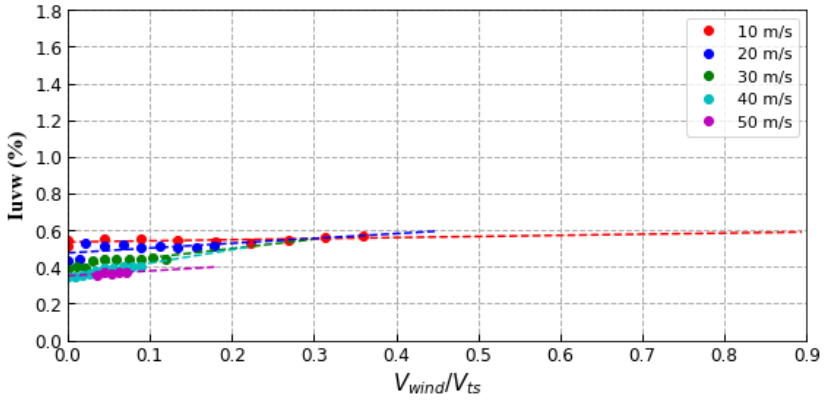

Iuvw (%)
V_{wind}/V_{ts}
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

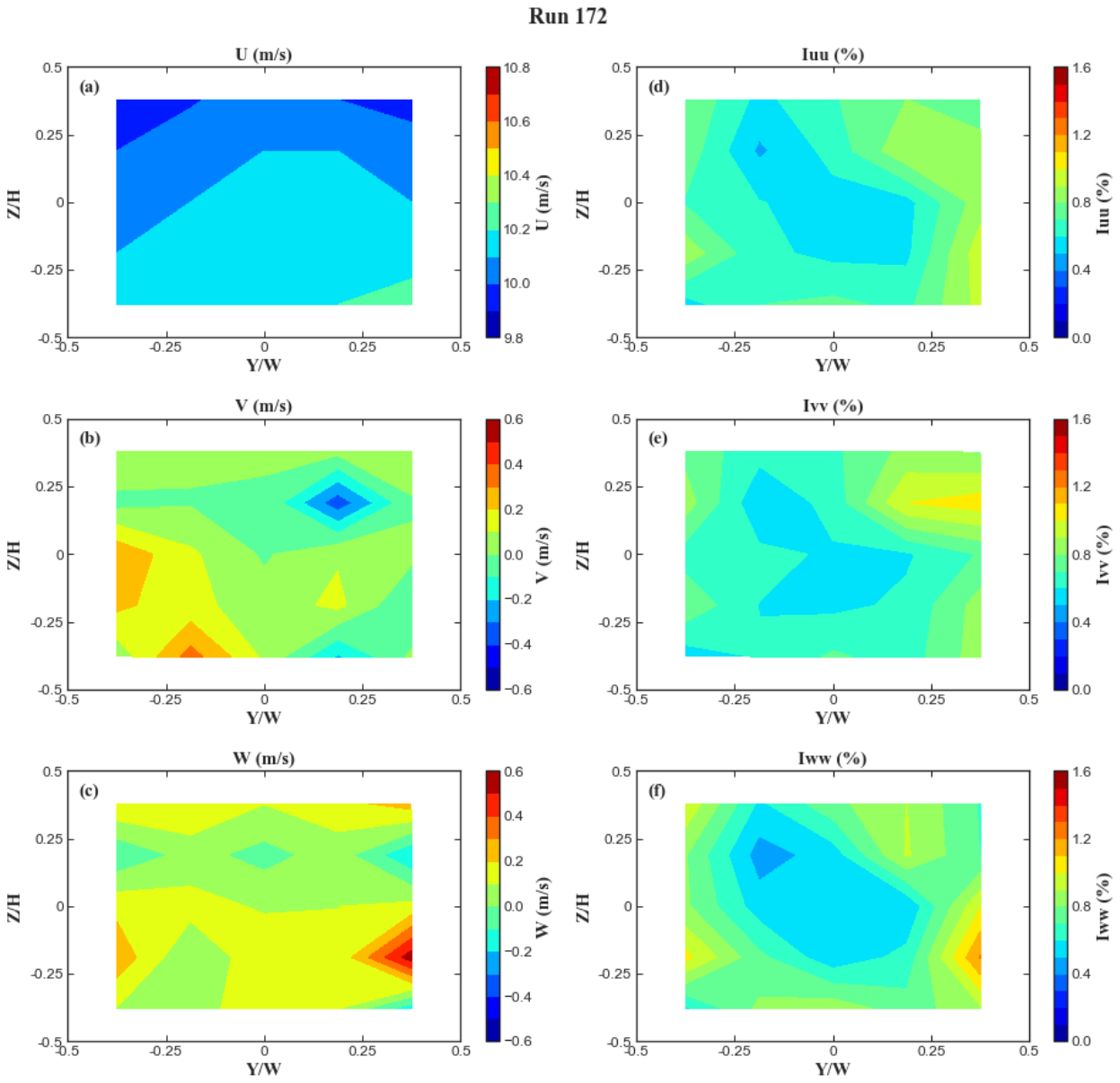
Run 171

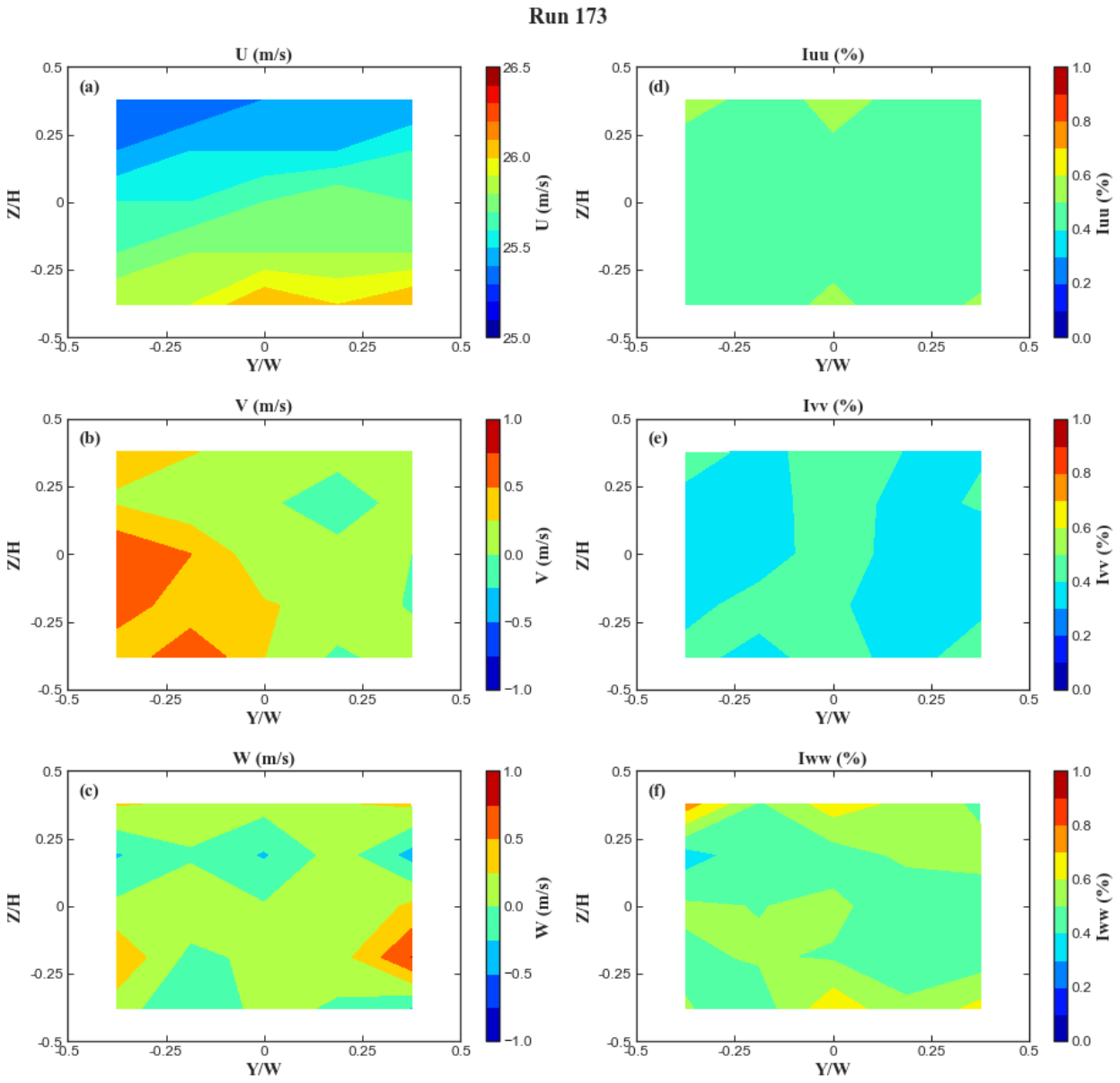

10 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuu (%)
V_{wind}/V_{ts}


10 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Ivv (%)
V_{wind}/V_{ts}

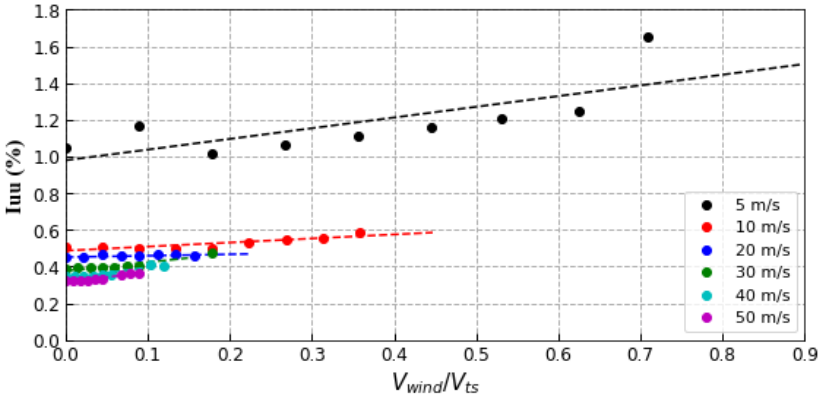

10 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iww (%)
V_{wind}/V_{ts}

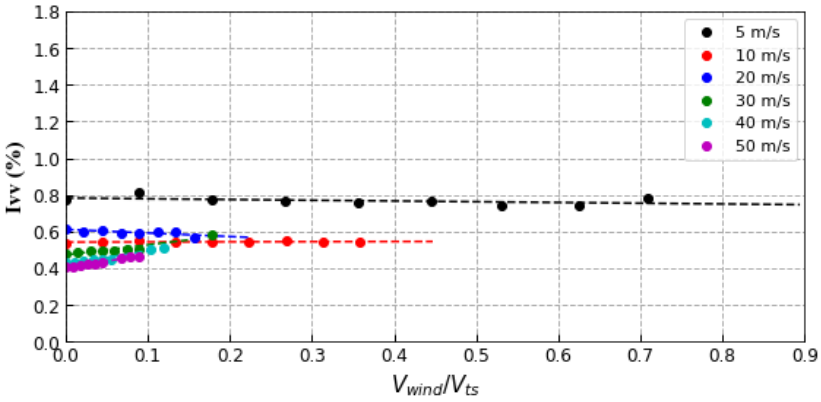

10 m/s
20 m/s
30 m/s
40 m/s
50 m/s
Iuvw (%)
V_{wind}/V_{ts}

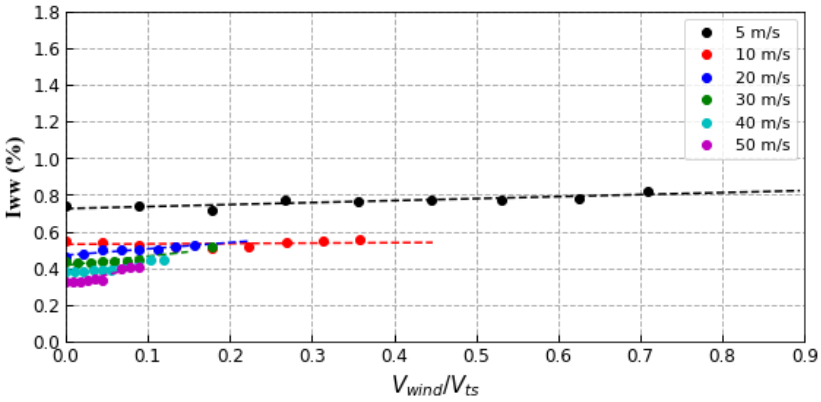

Run 172
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

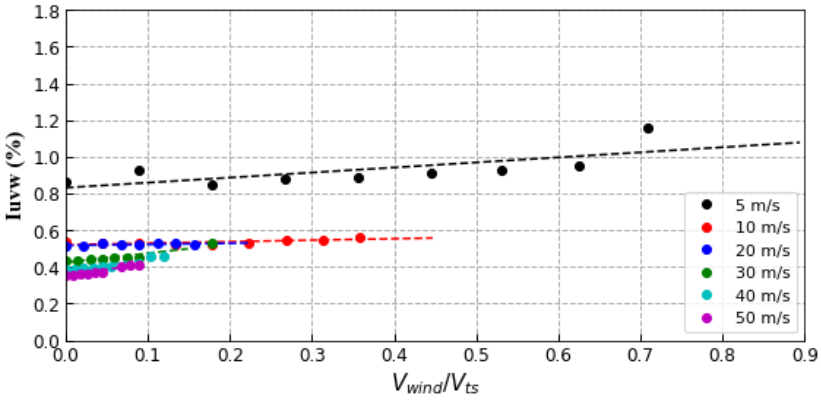

Run 173
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

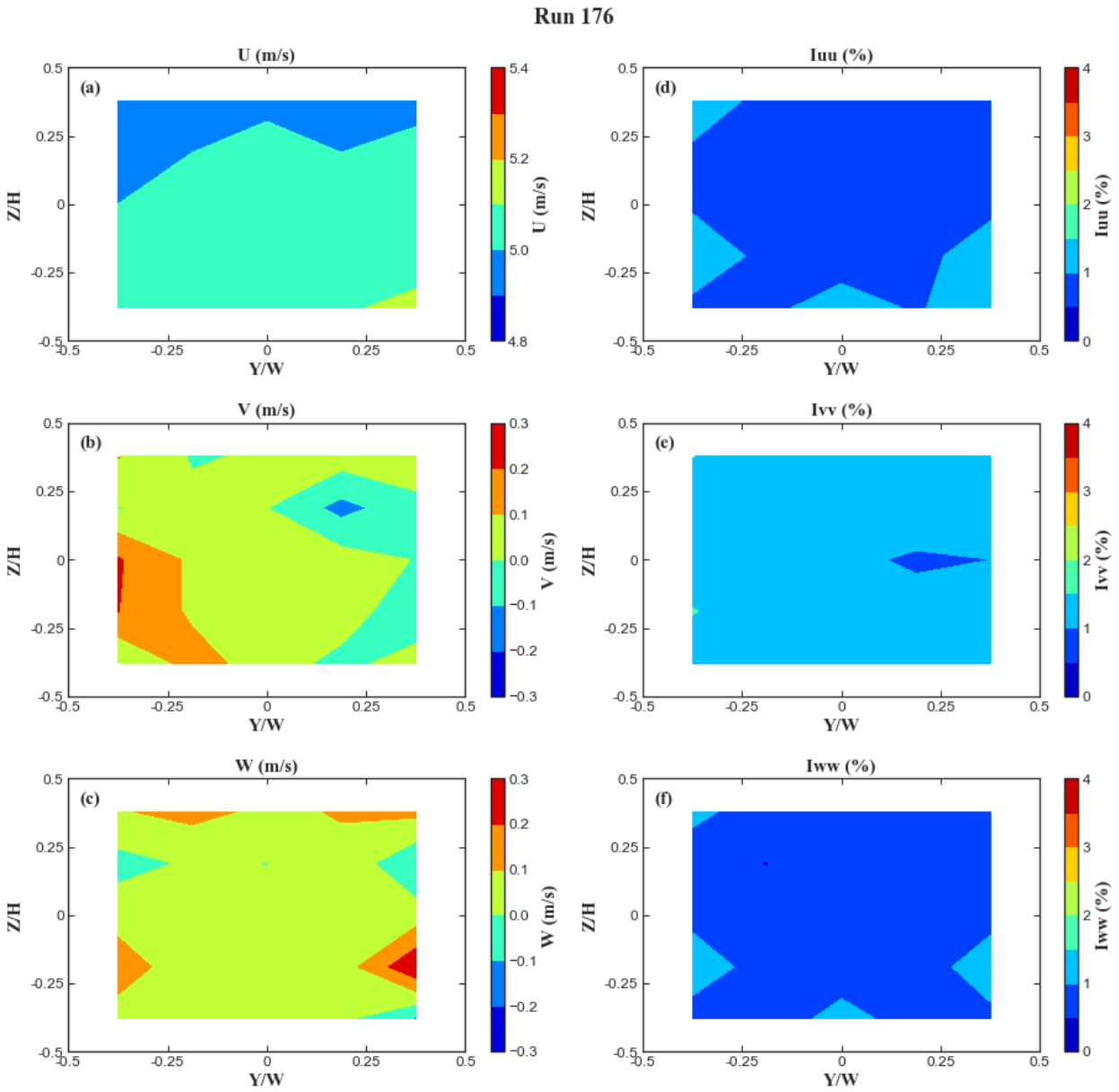
Run 175

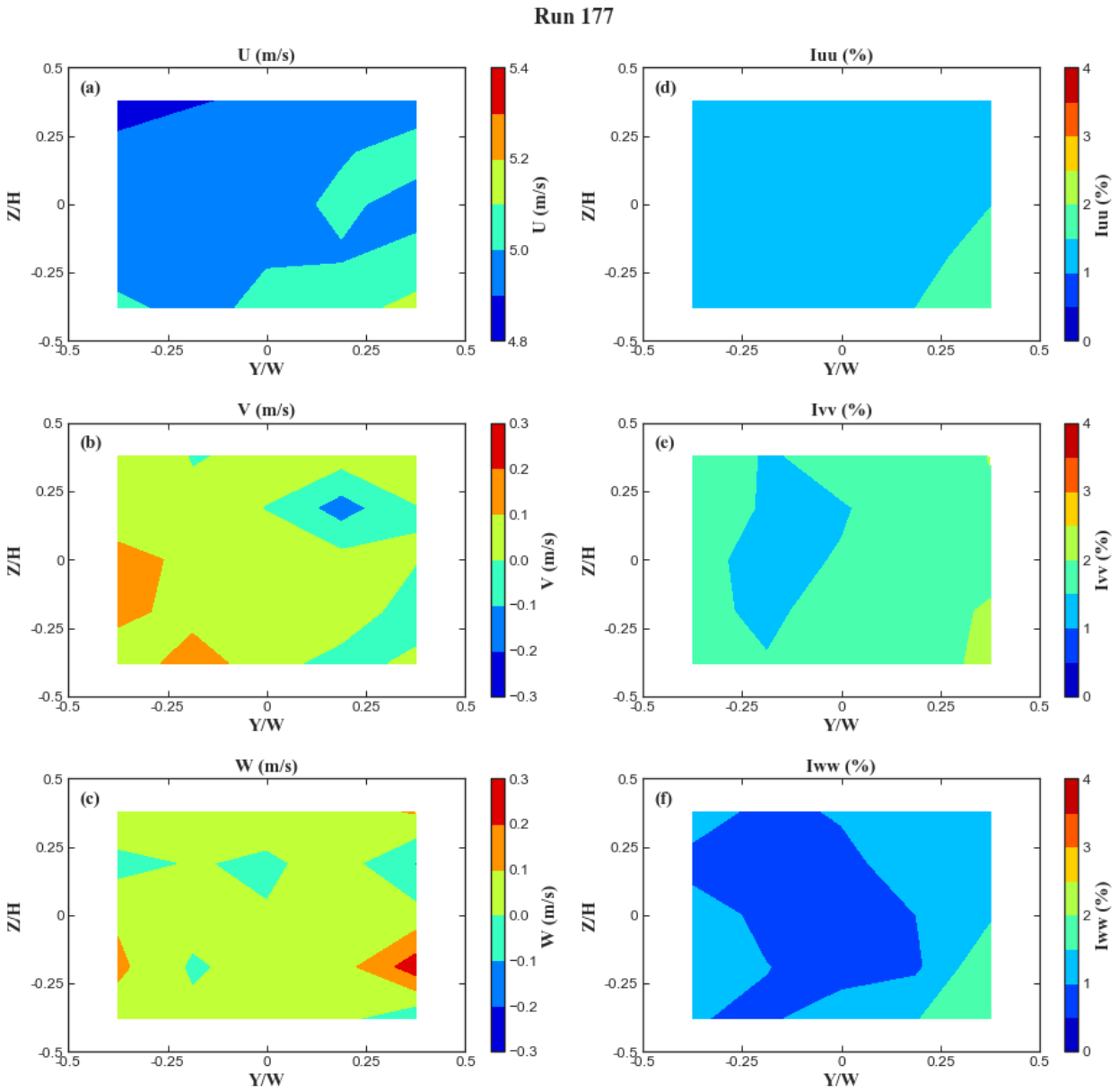

Iuu (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

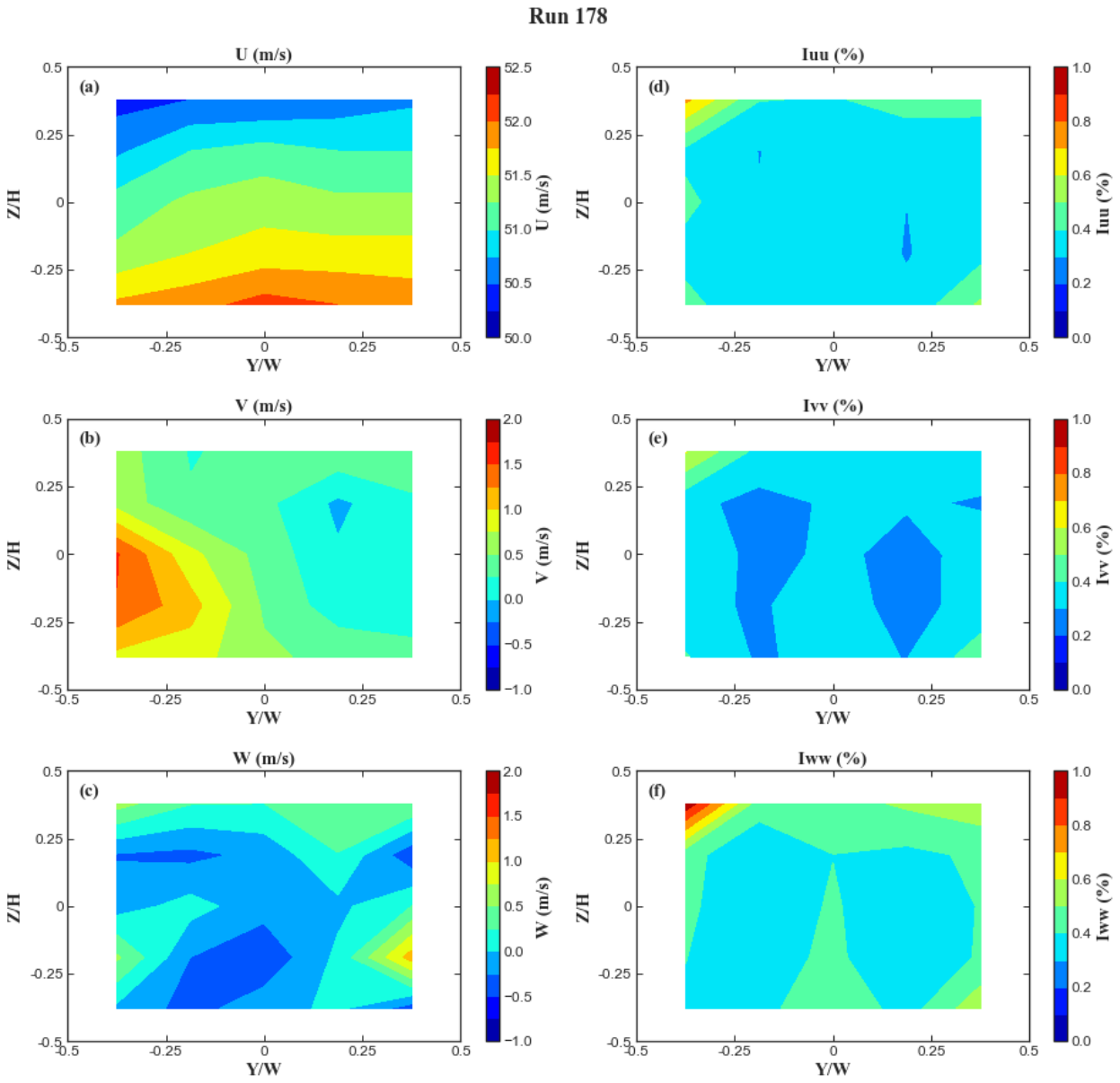

Ivv (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

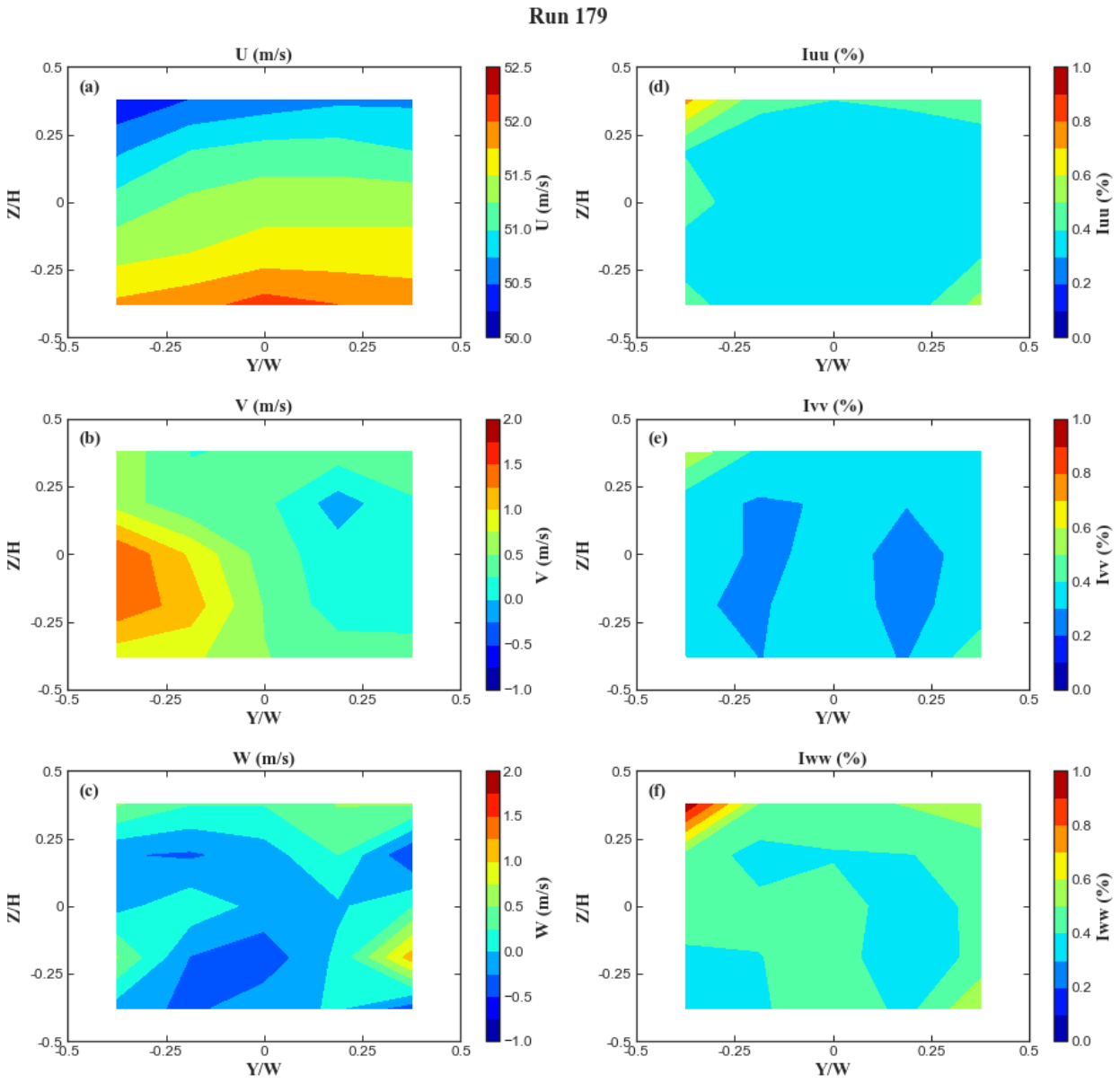

Iww (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

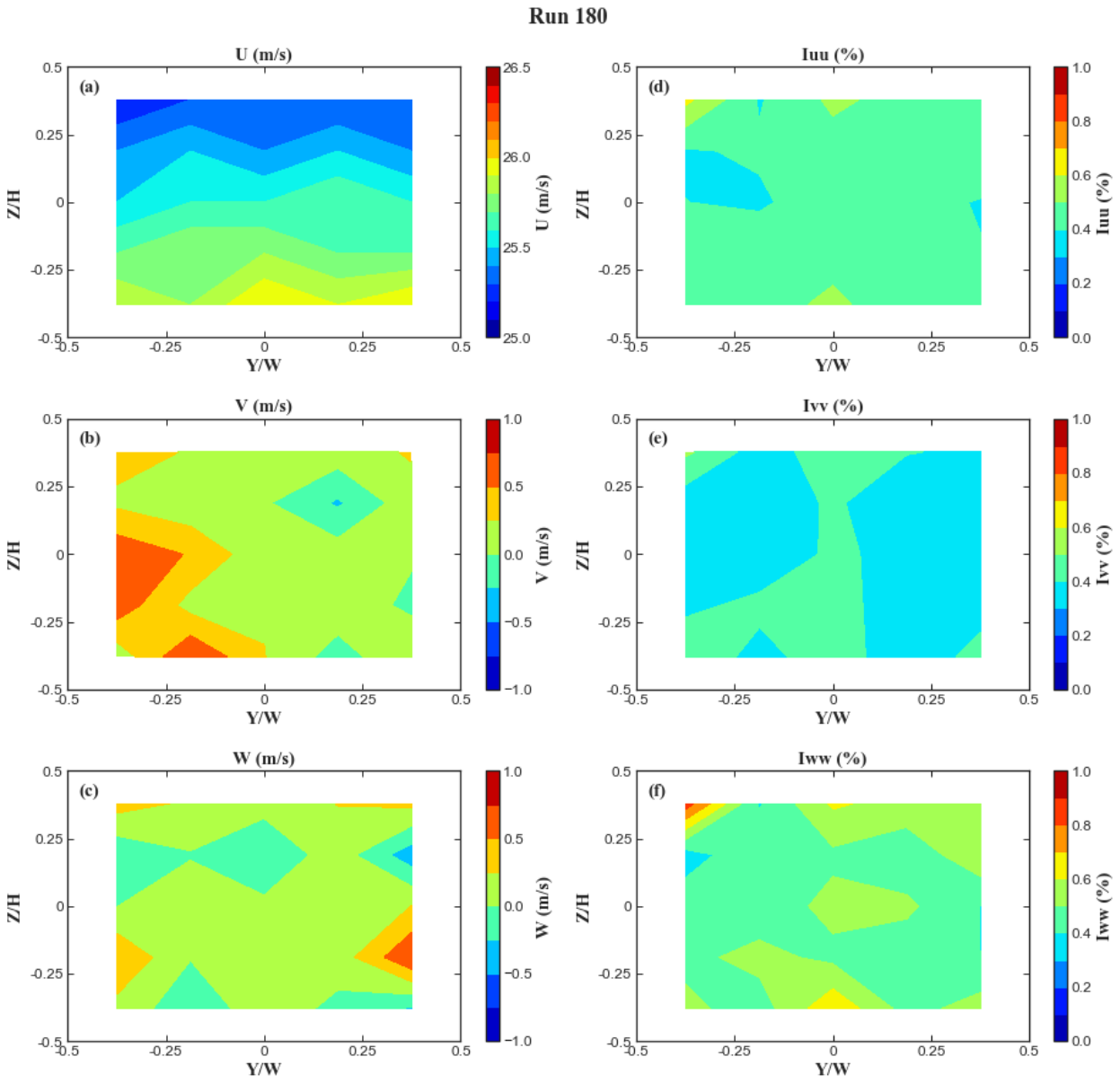

Iuvw (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s


Run 176
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

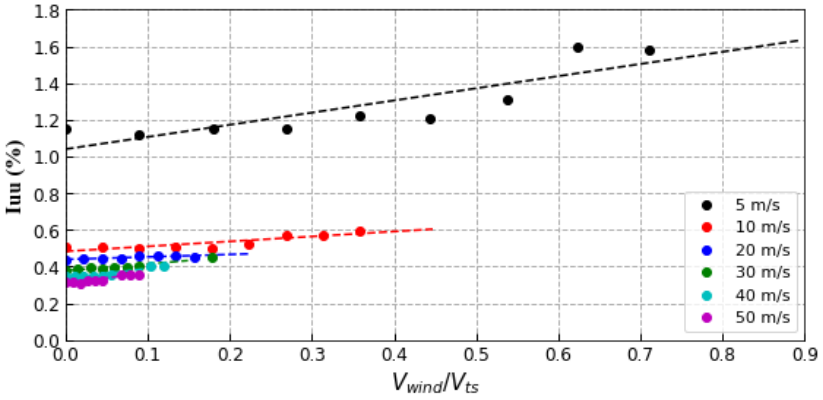

Run 177
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

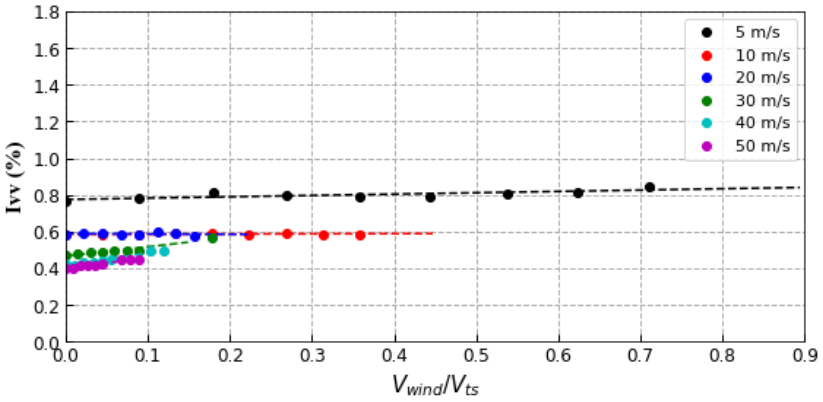

Run 178
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

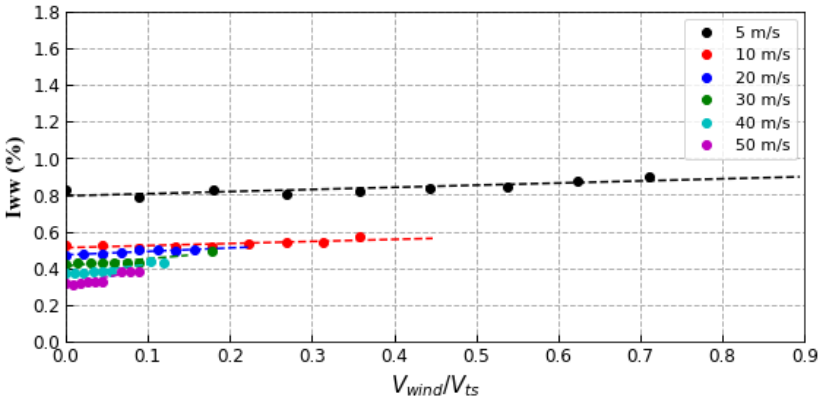

Run 179
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

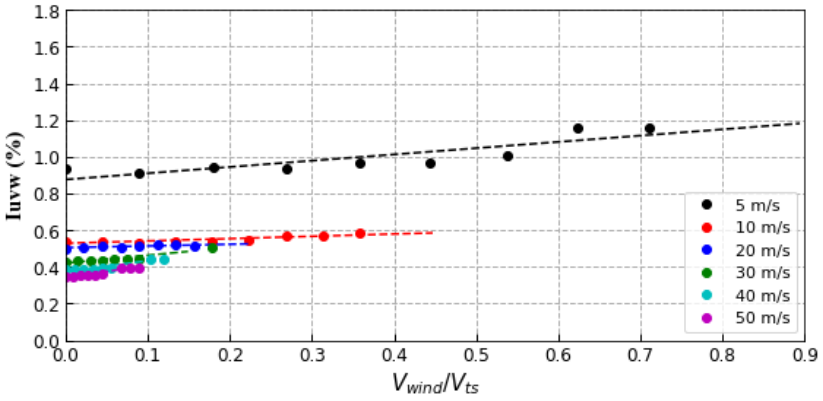

Run 180
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

Run 184

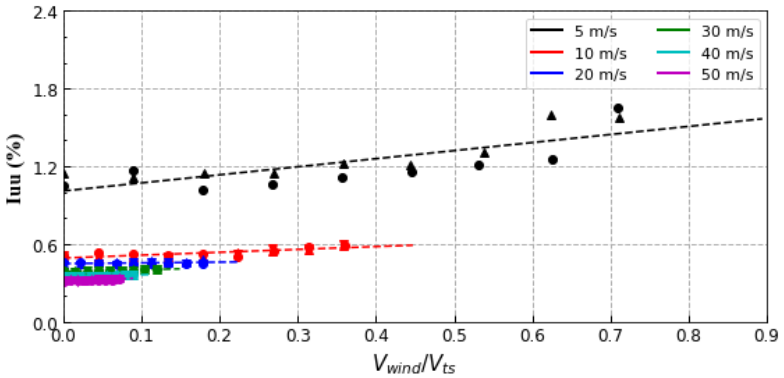

Iuu (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

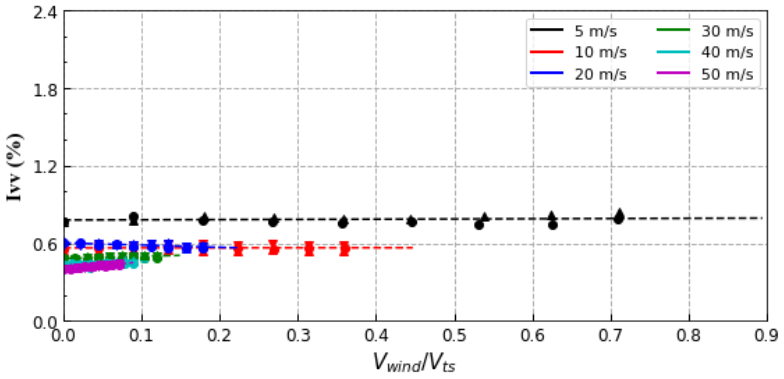

Ivv (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

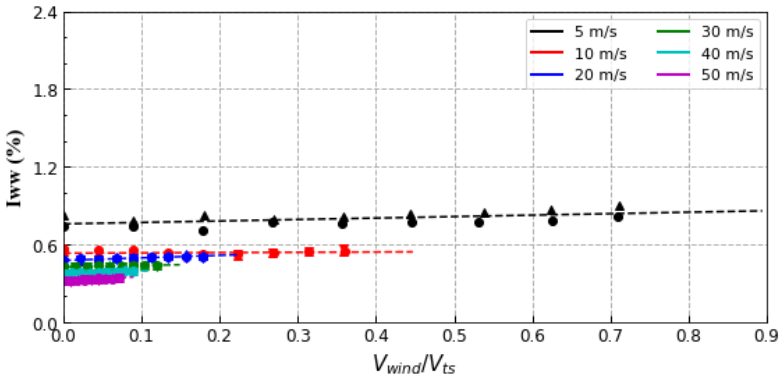

Iww (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

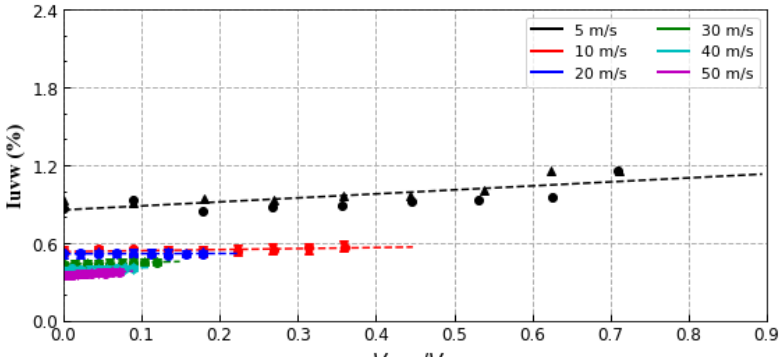

Iuvw (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

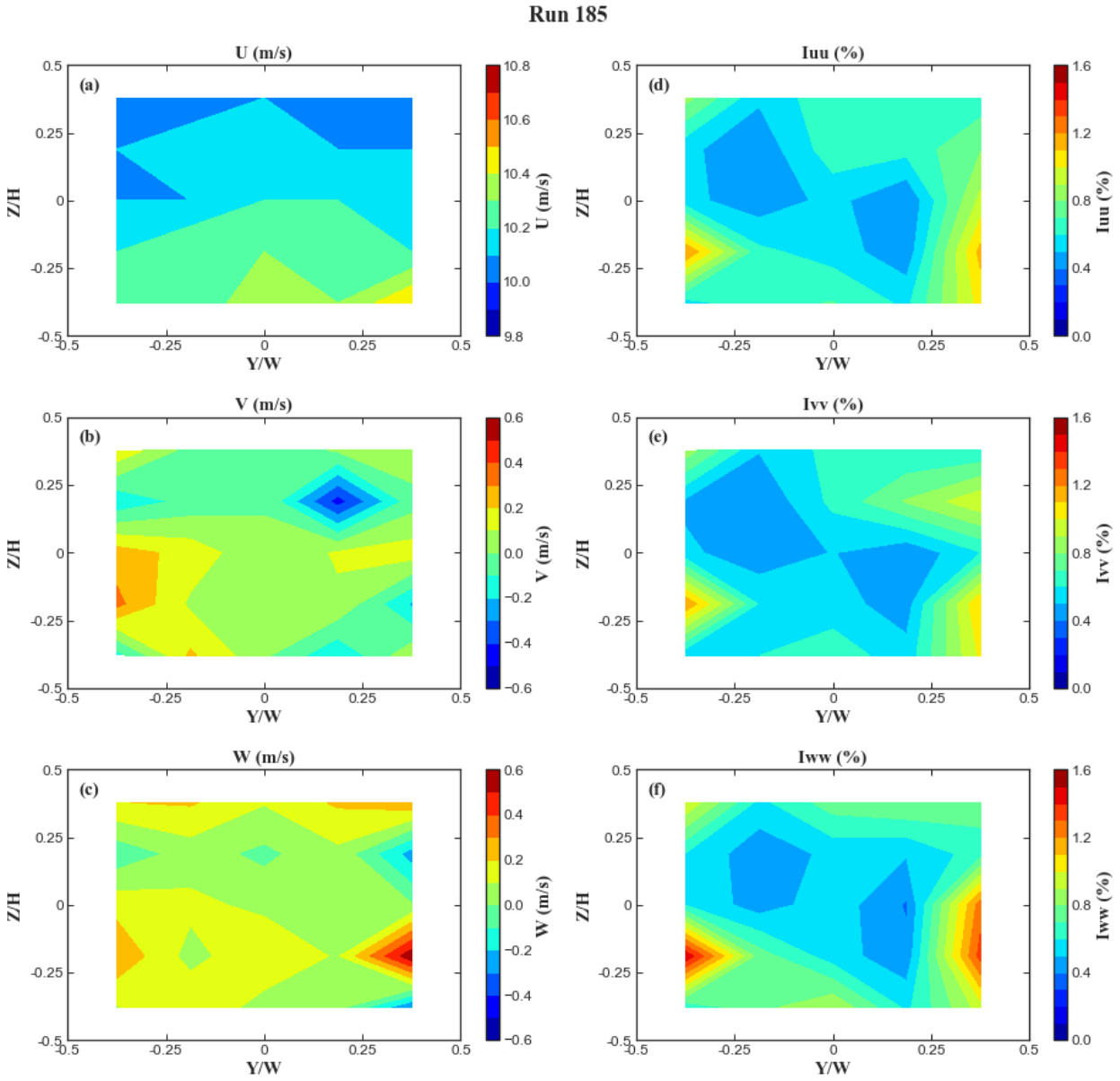
Runs 171, 175 and 184 combined.

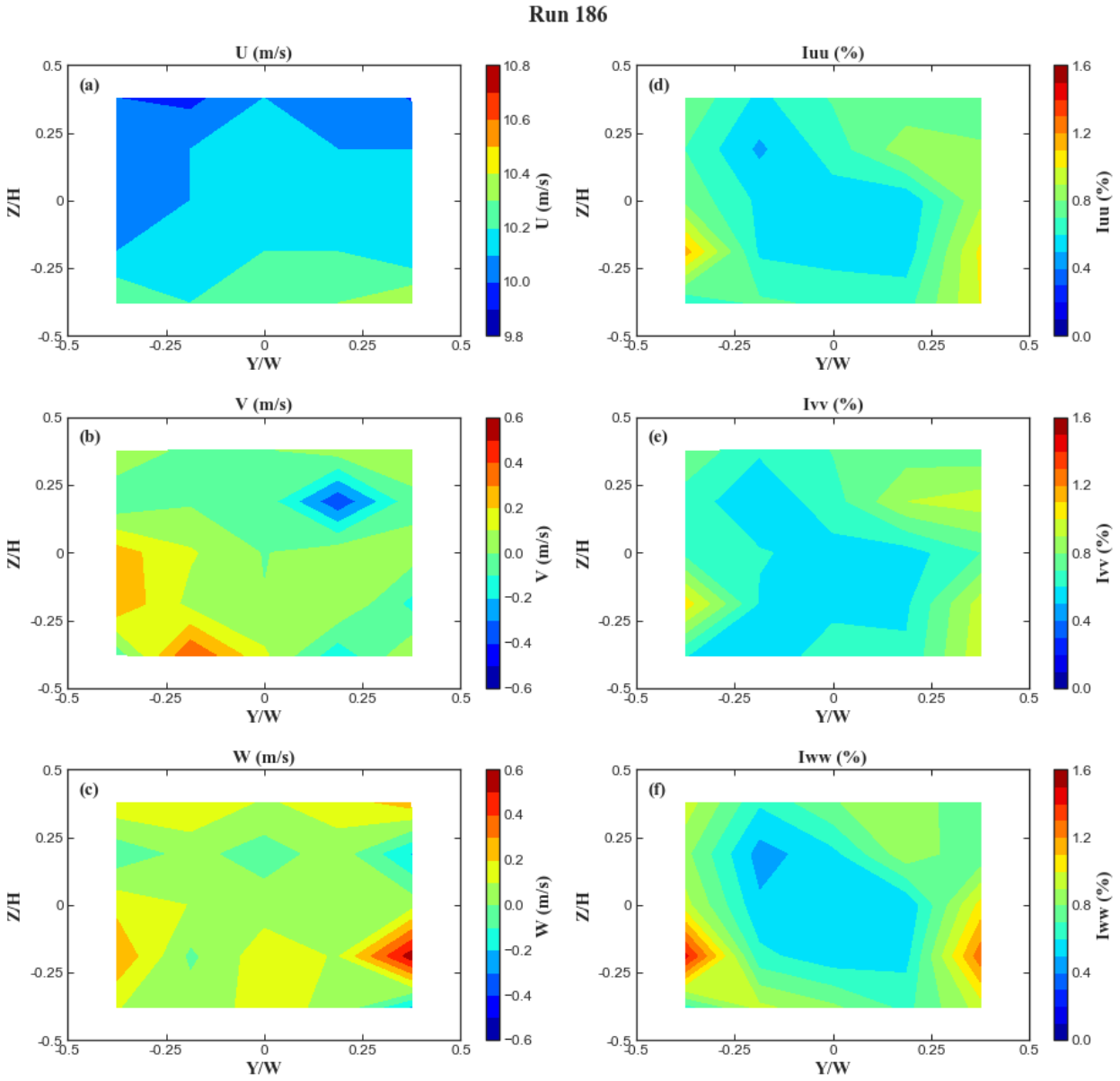


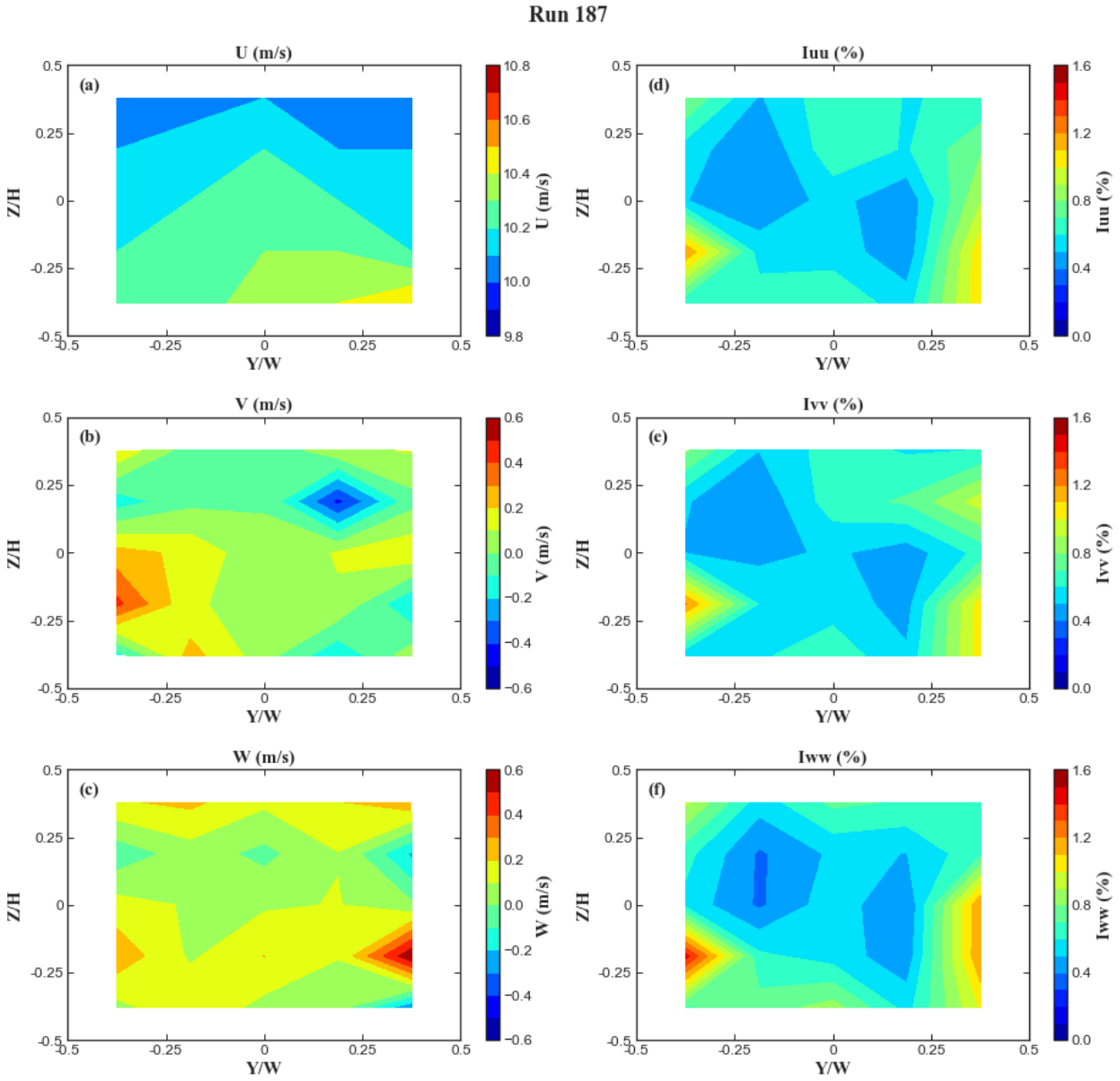


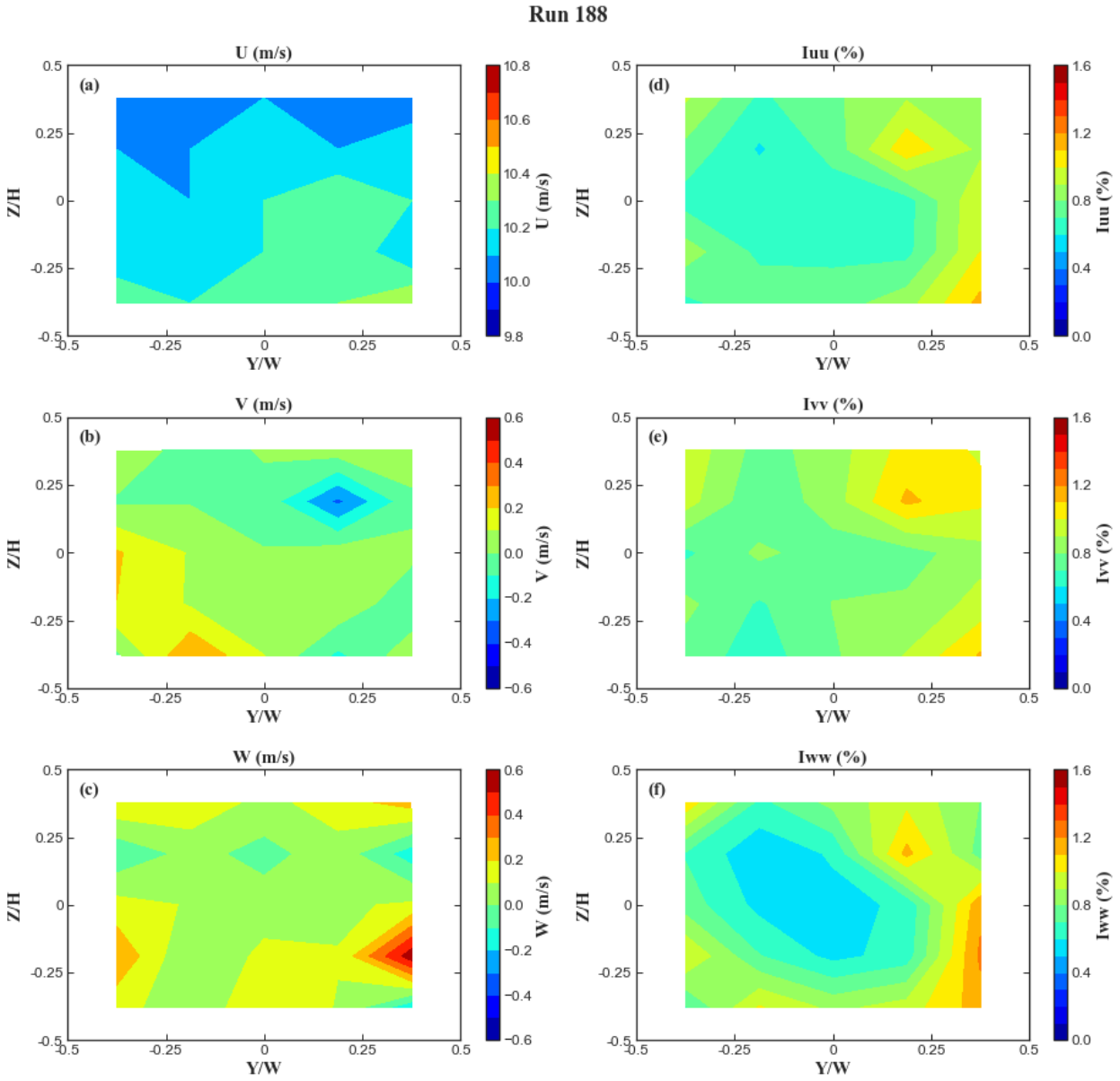




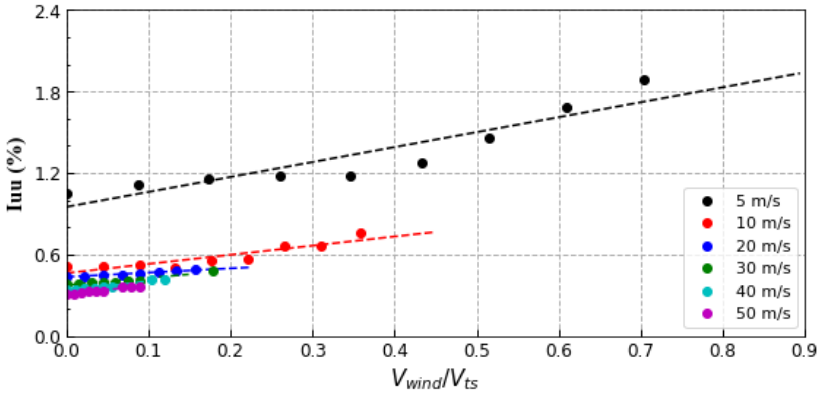

Run 185
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

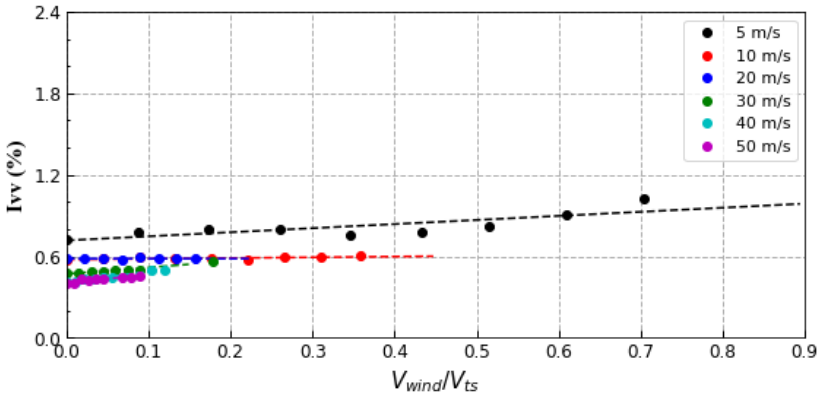

Run 186
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

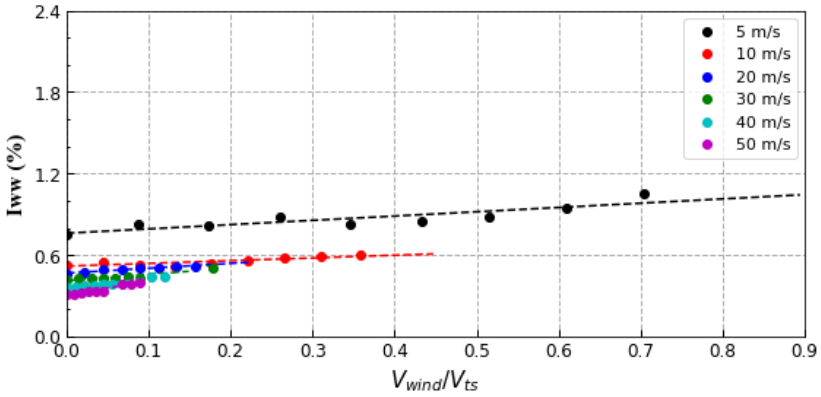

Run 187
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

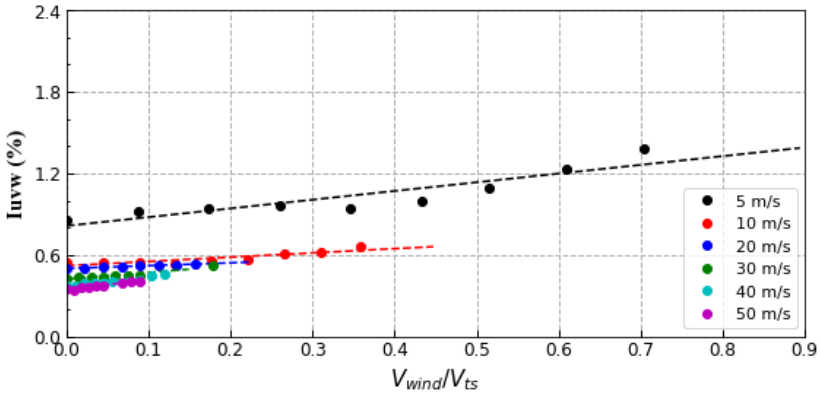

Run 188
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

Run 189

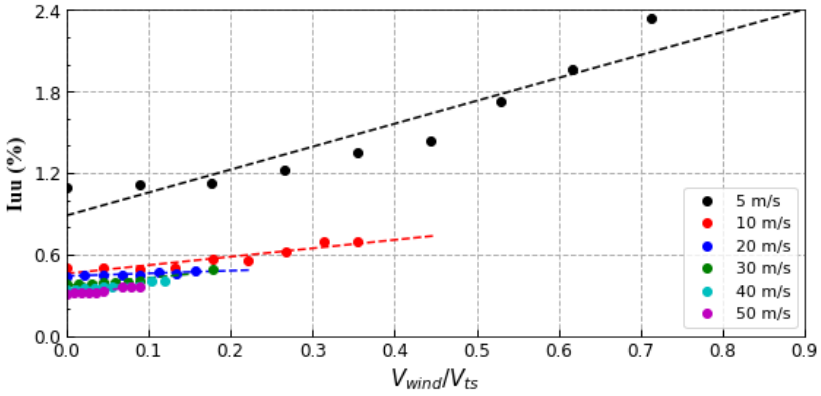

Iuu (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

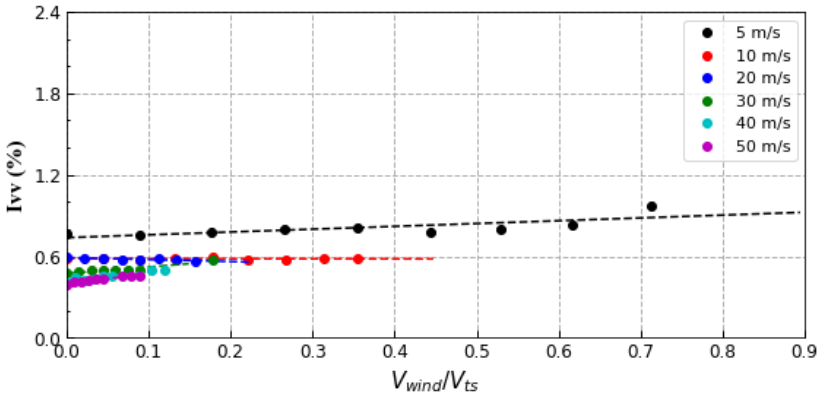

Ivv (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

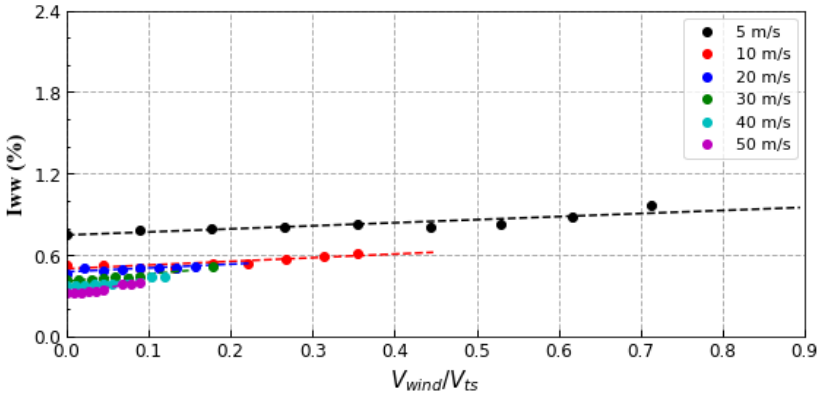

Iww (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

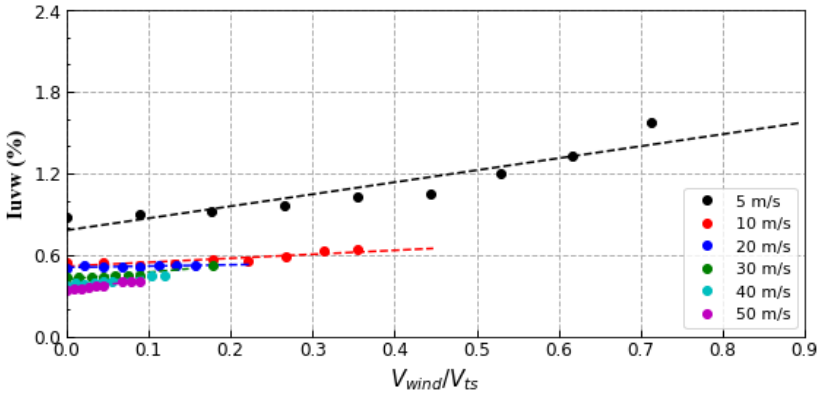

Iuvw (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

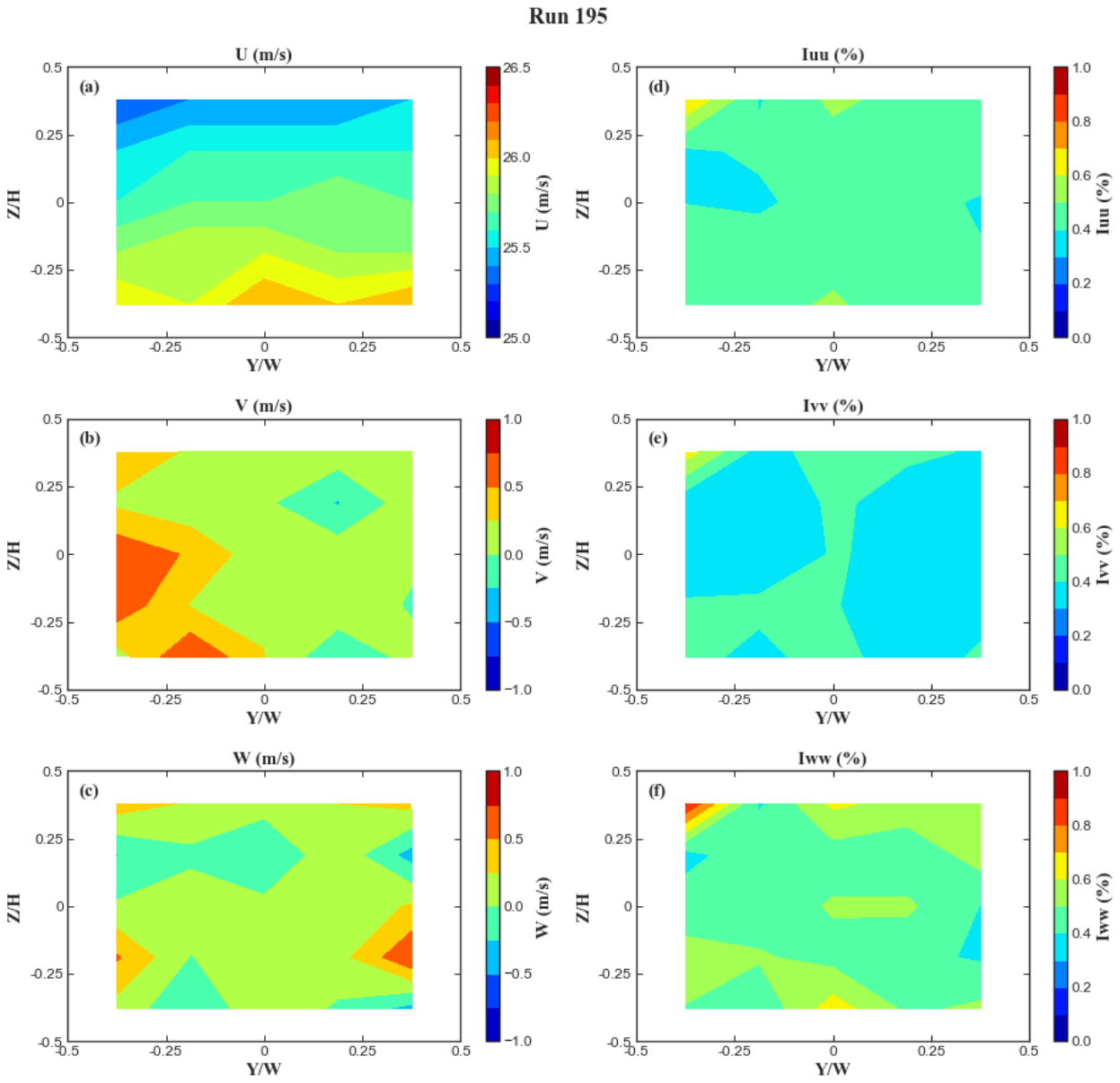
Run 194

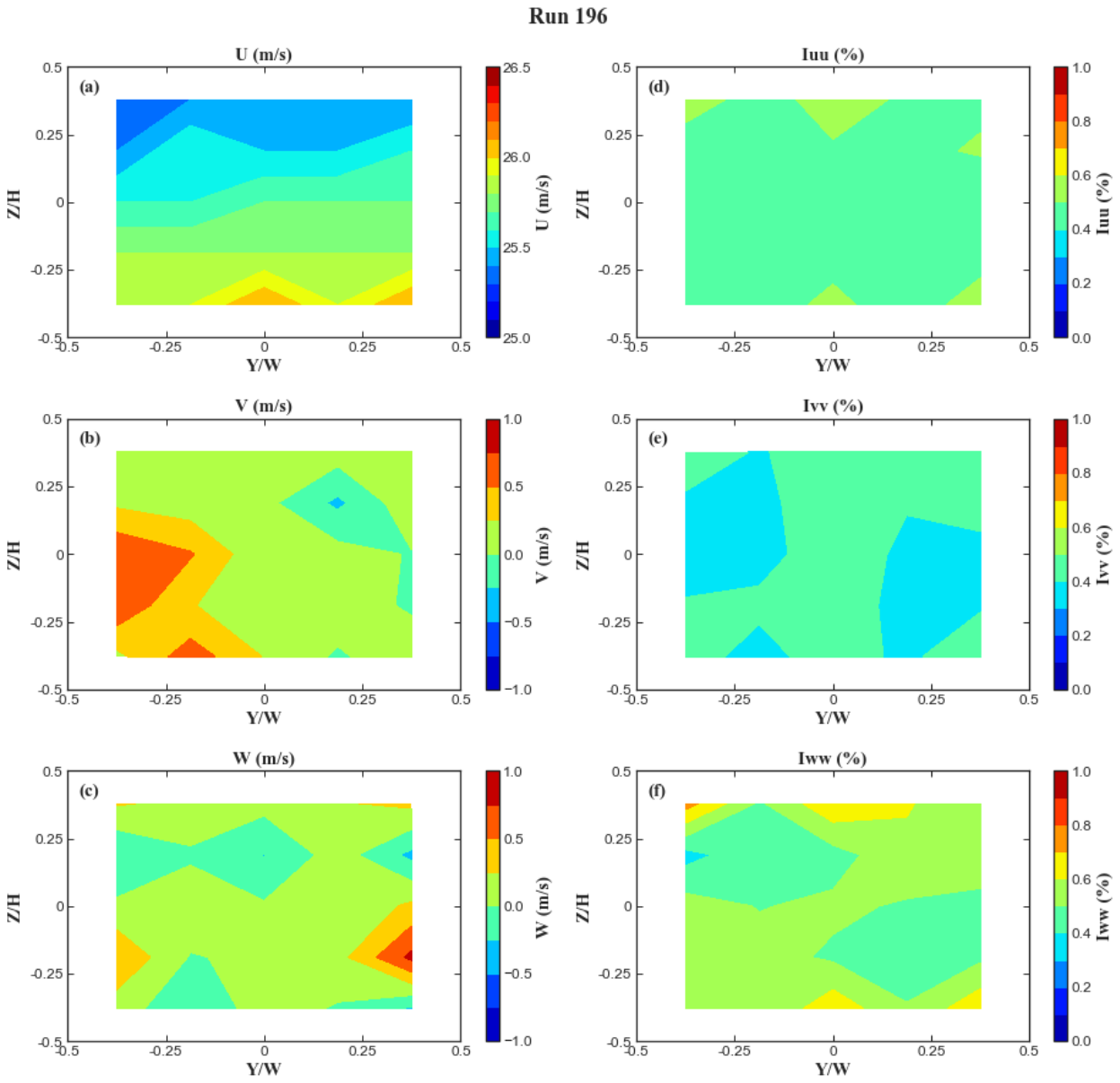

Iuu (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

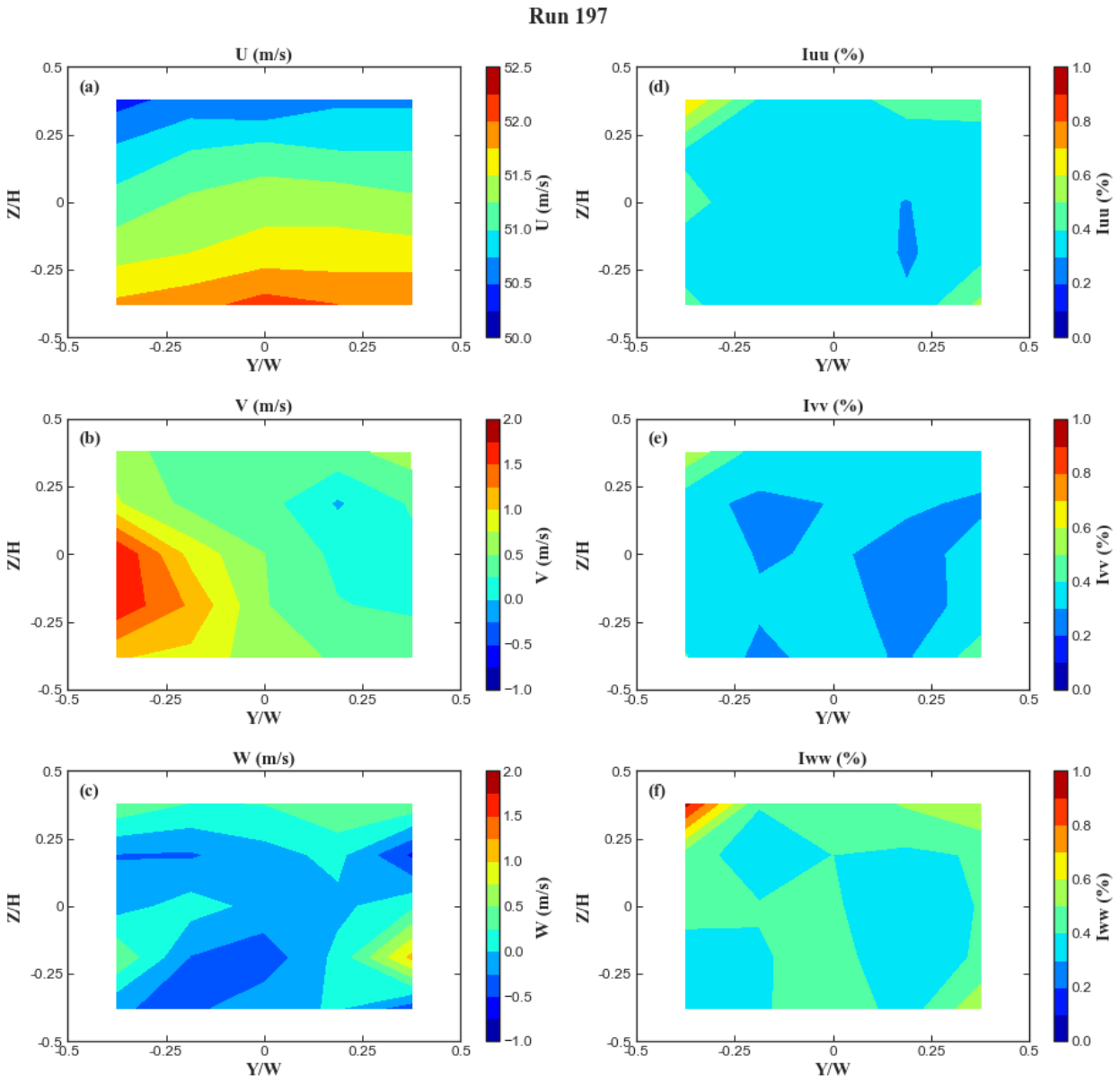

Ivv (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

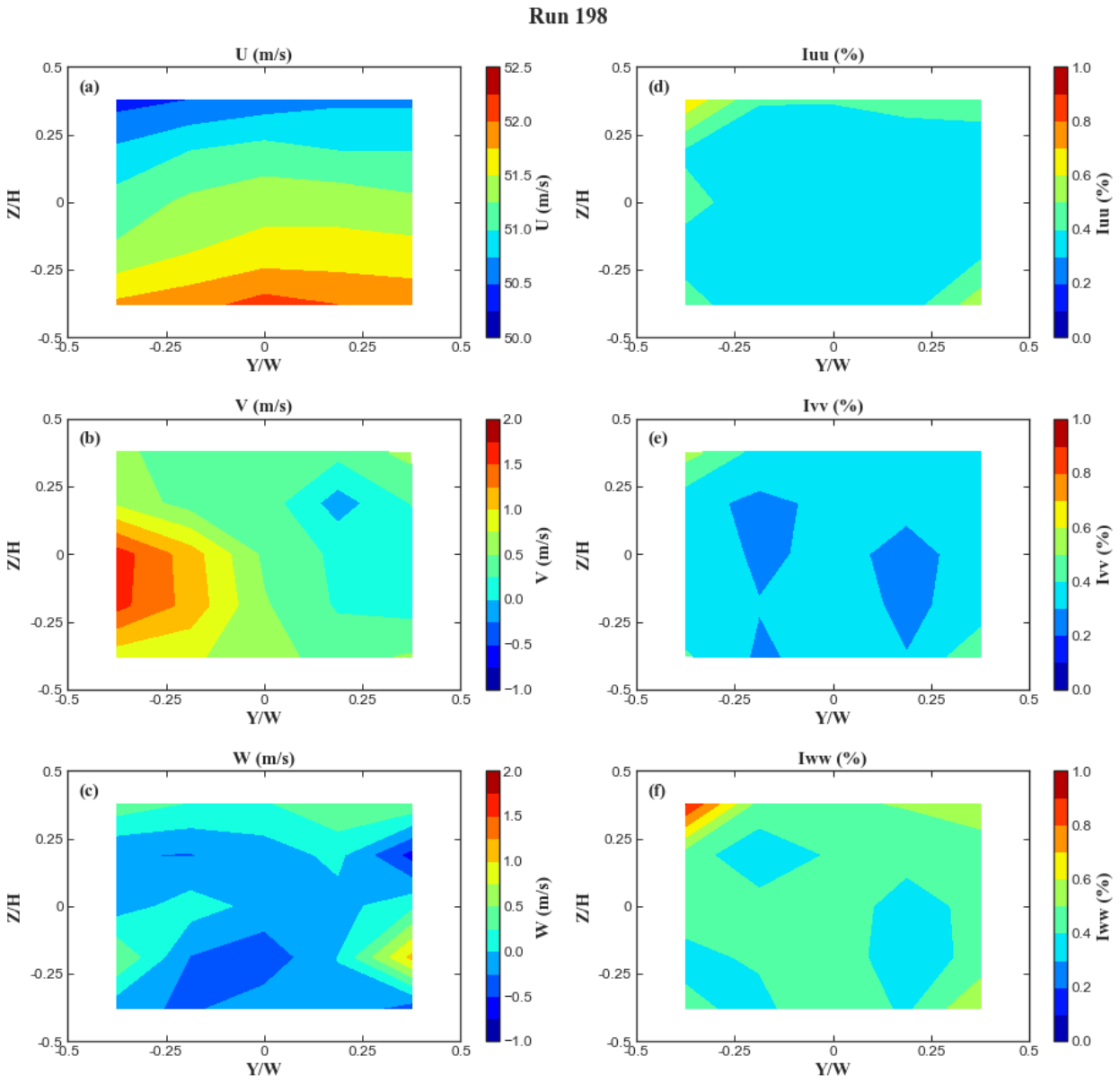

Iww (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

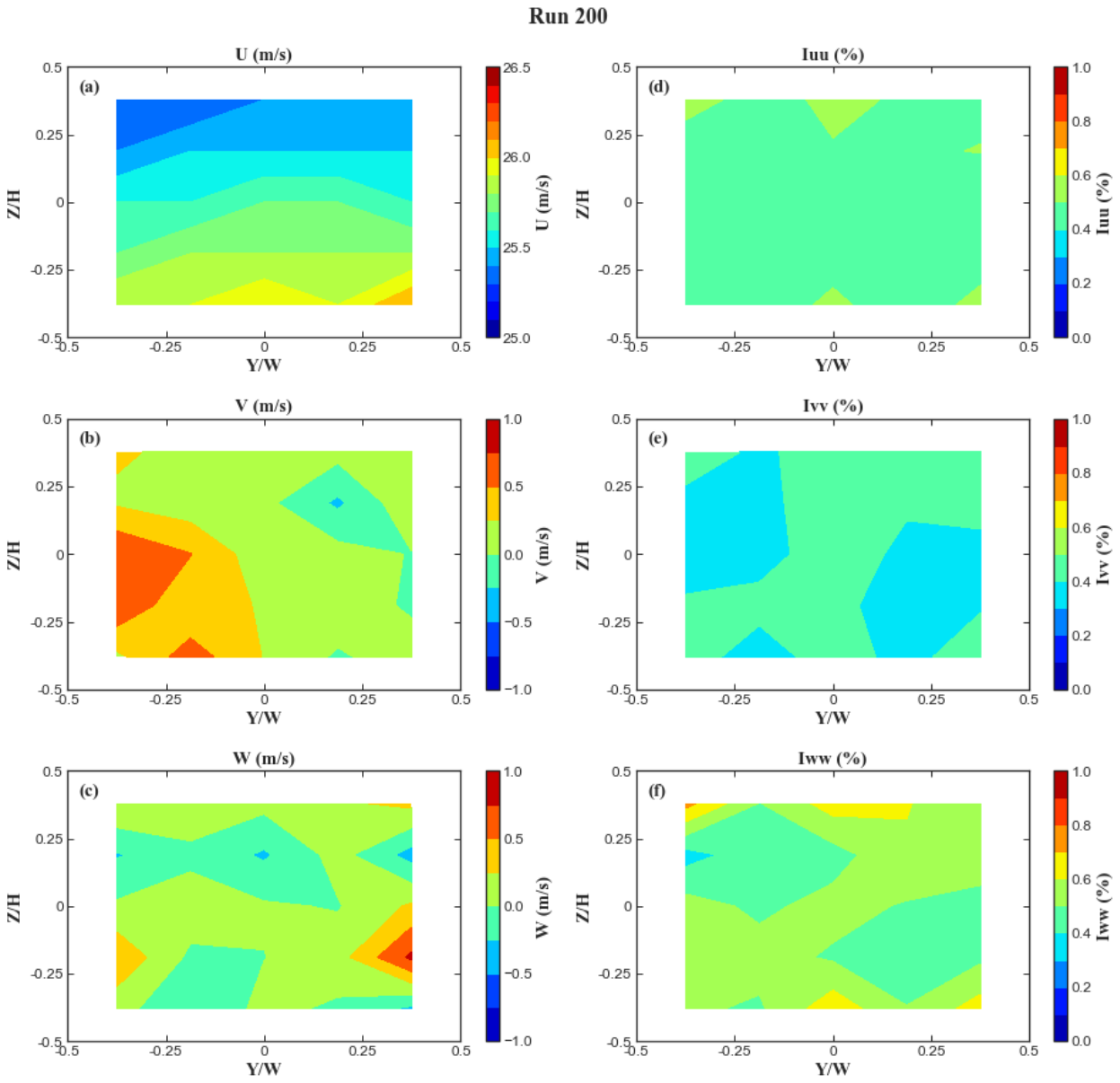

Iuvw (%)
V_{wind}/V_{ts}
5 m/s
10 m/s
20 m/s
30 m/s
40 m/s
50 m/s

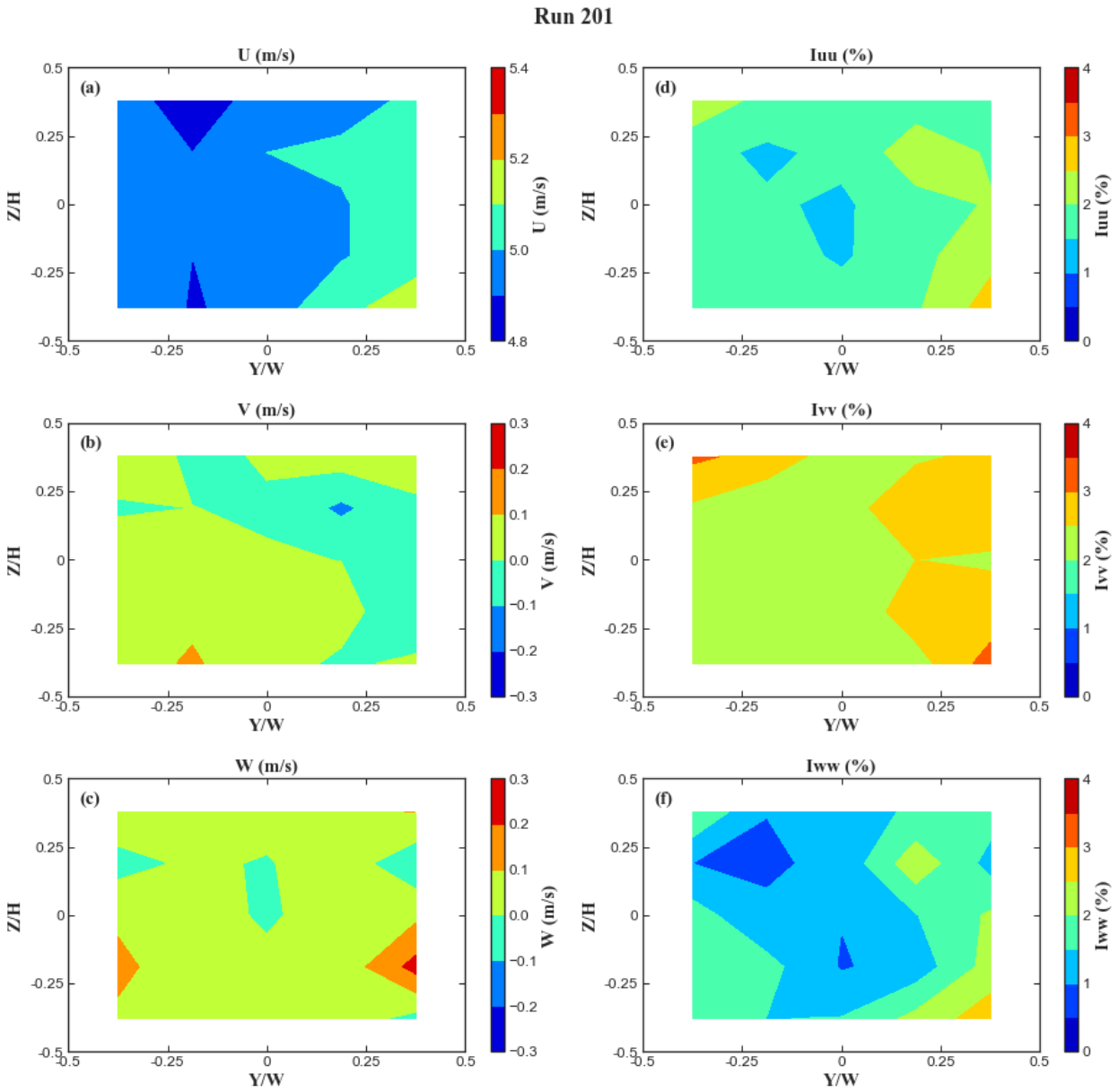

Run 195
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

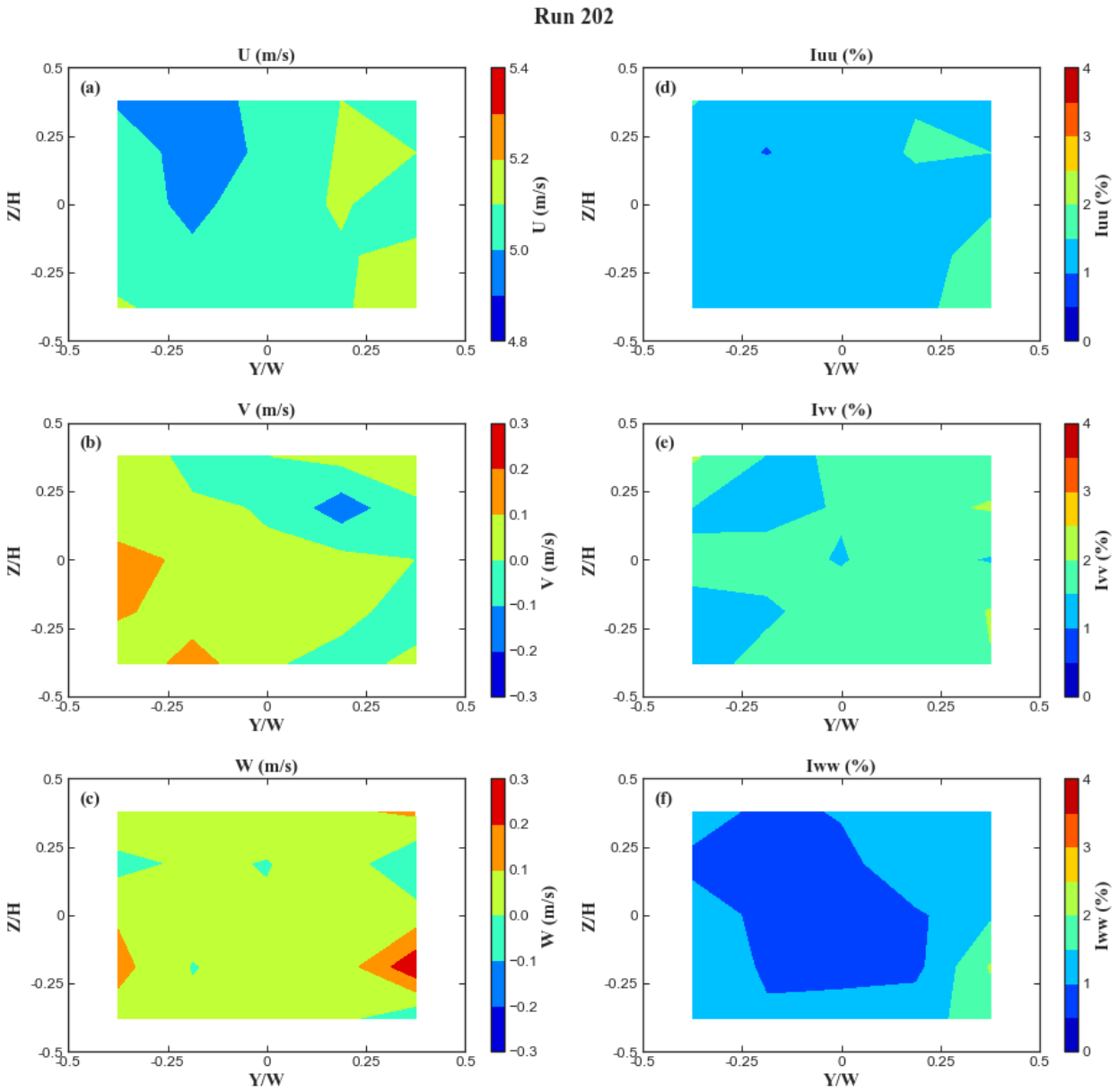

Run 196
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

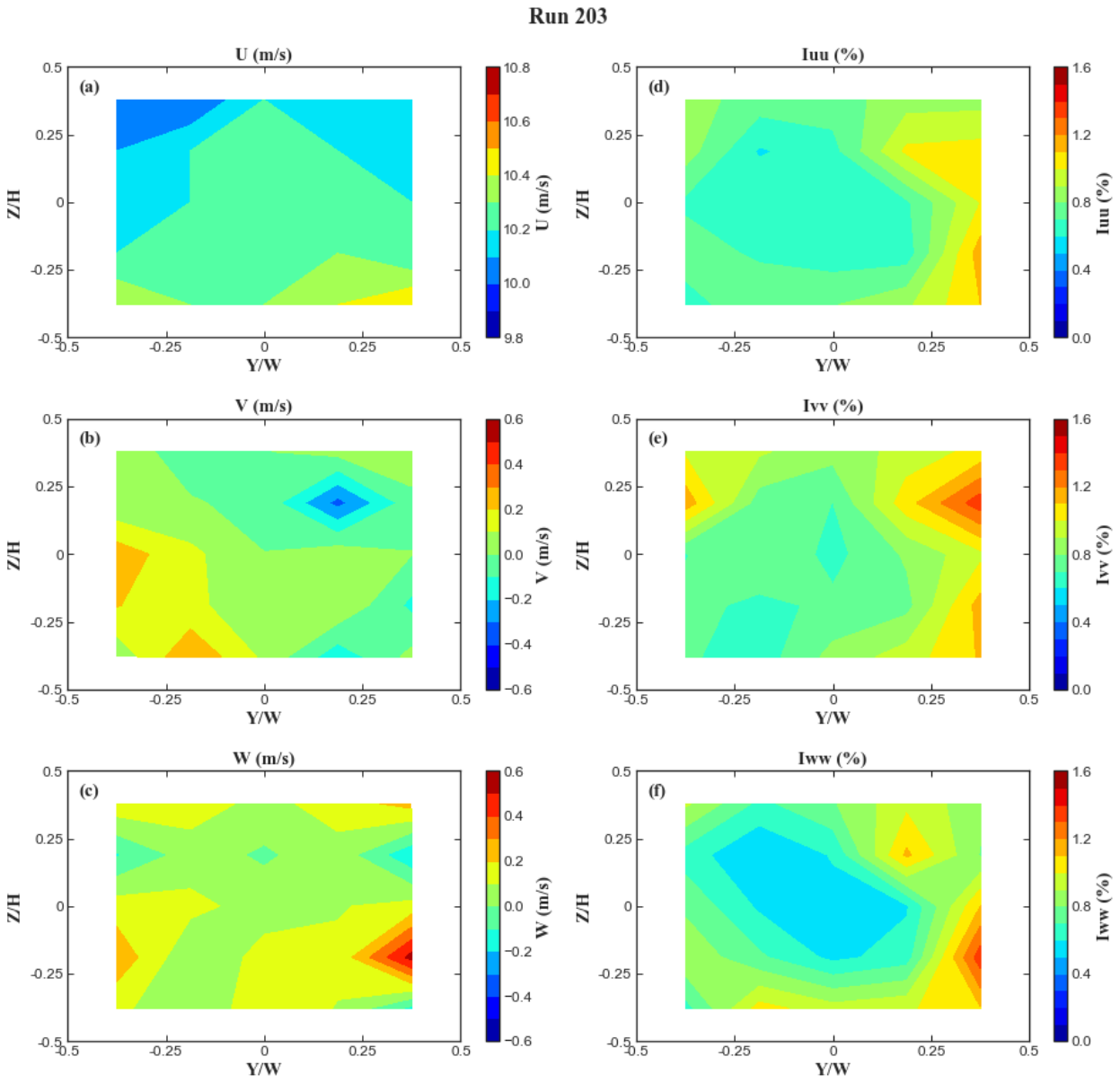

Run 197
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

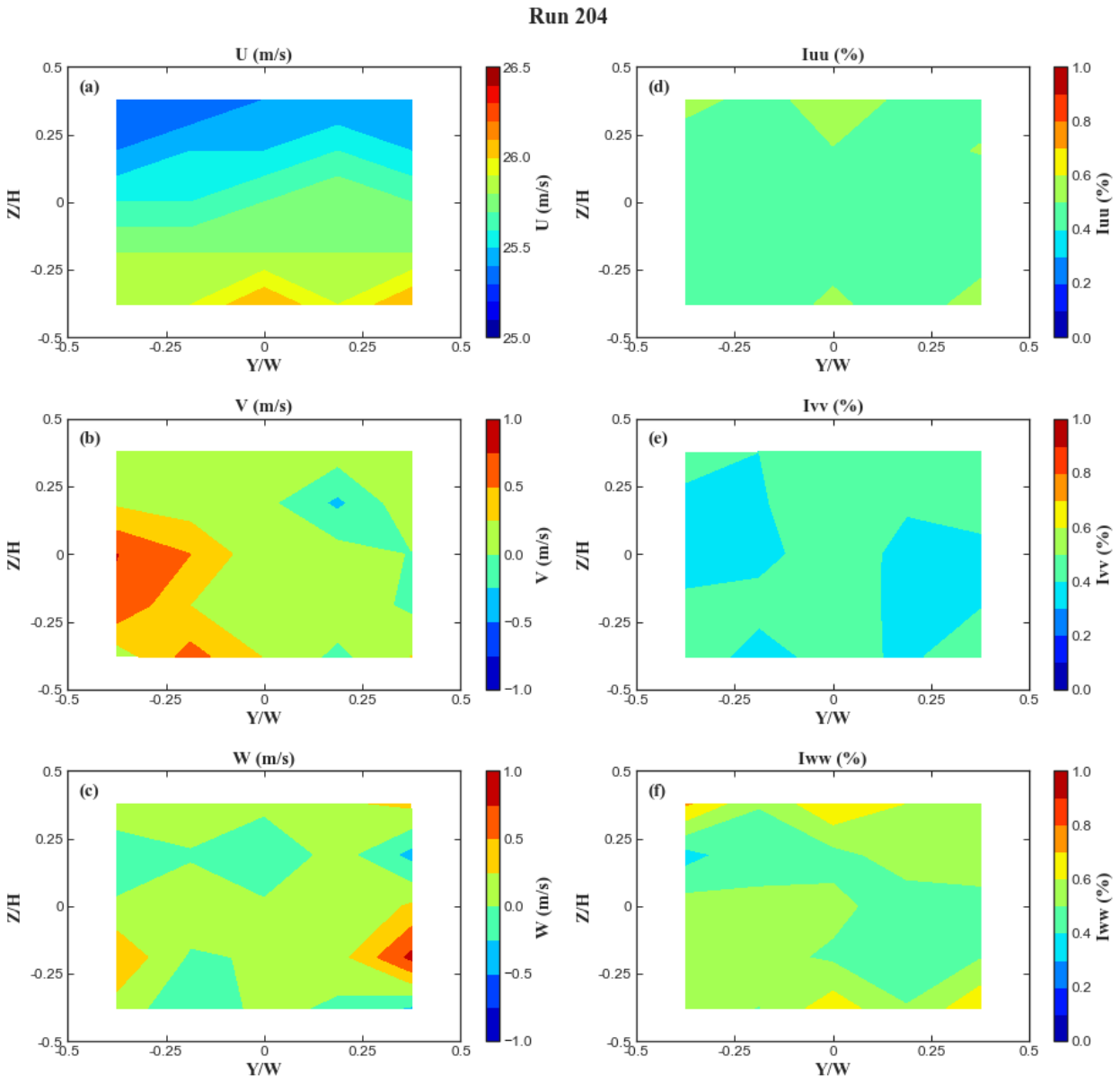

Run 198
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)

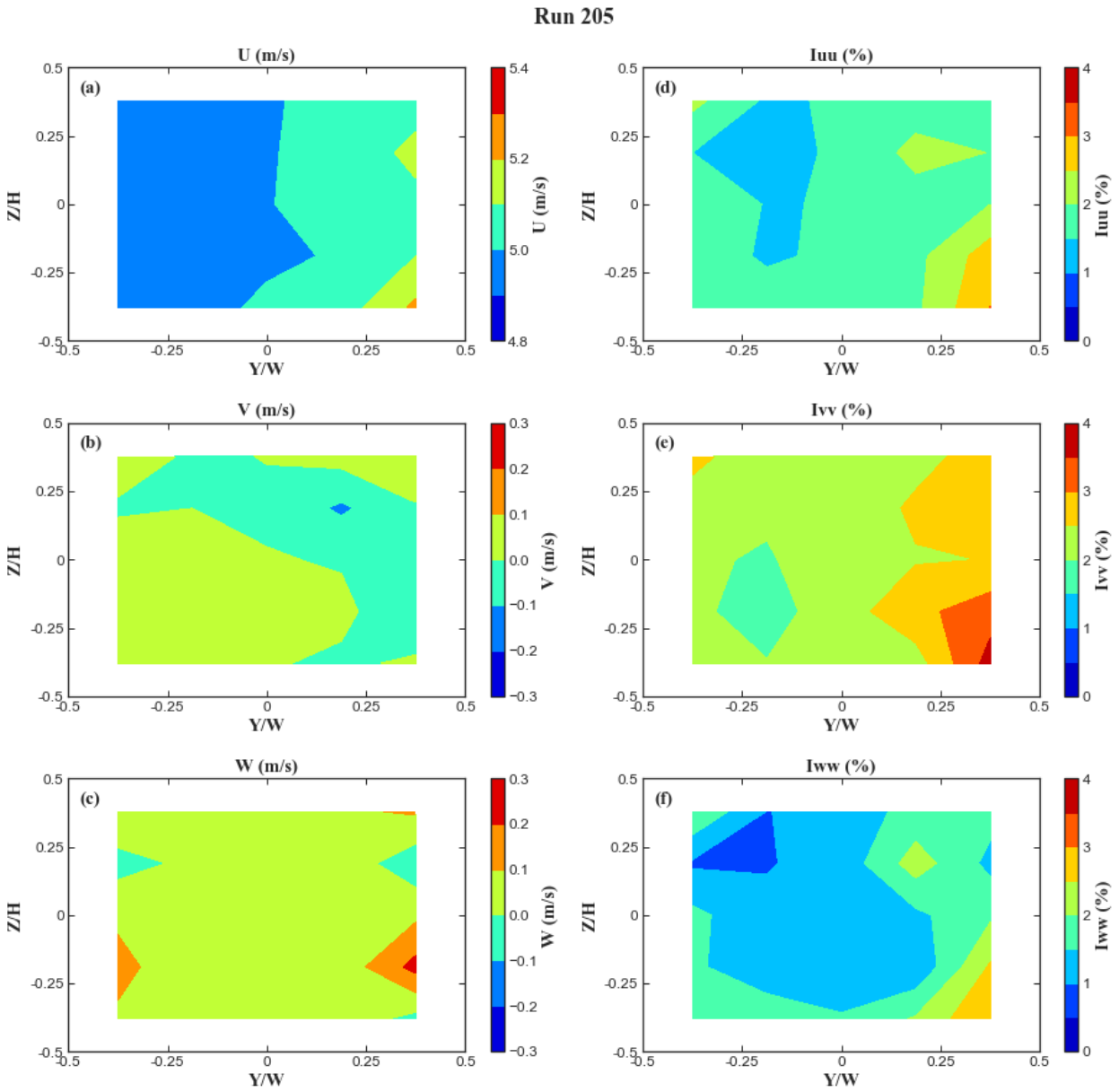

Run 200
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

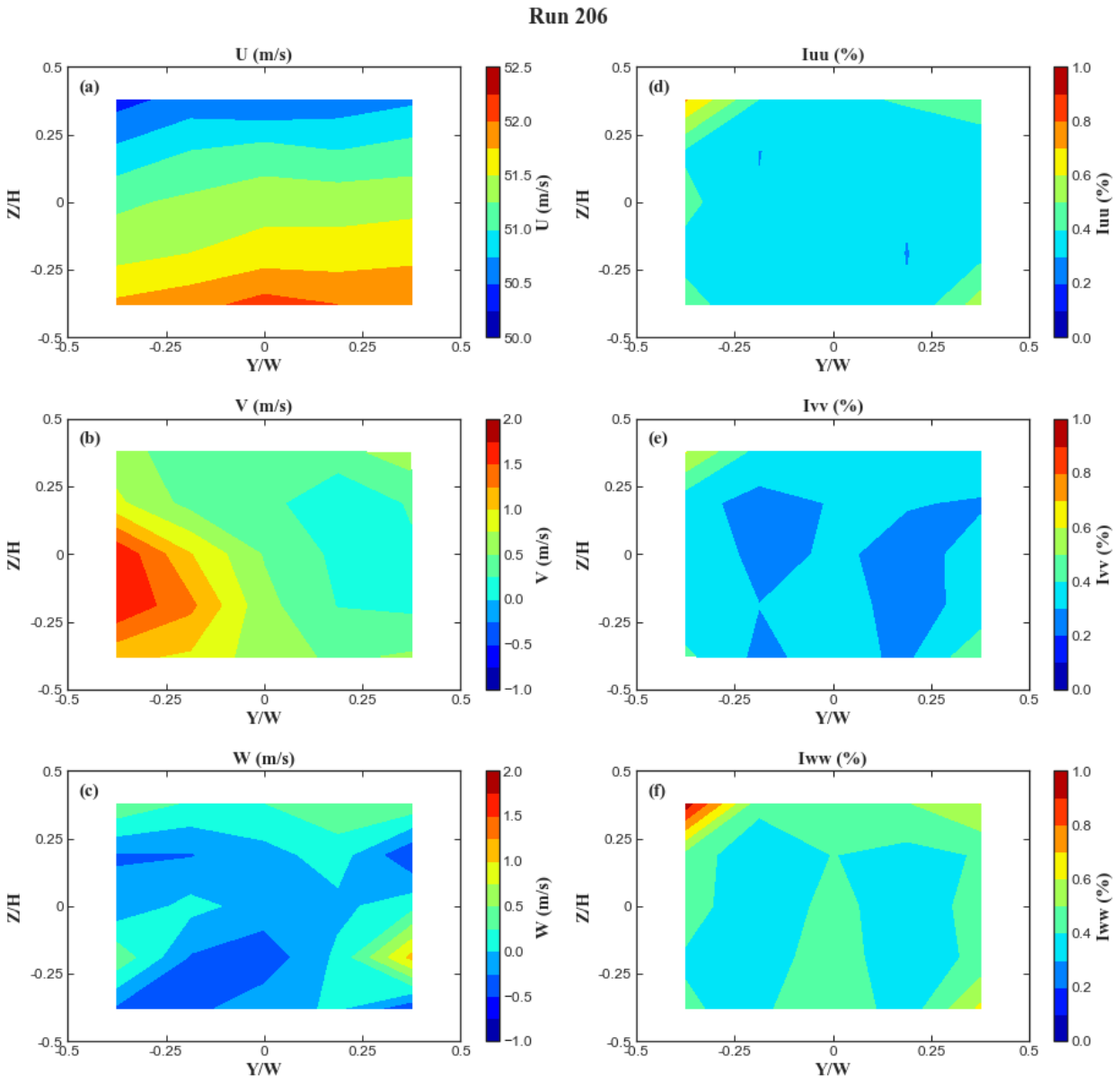

Run 201
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)

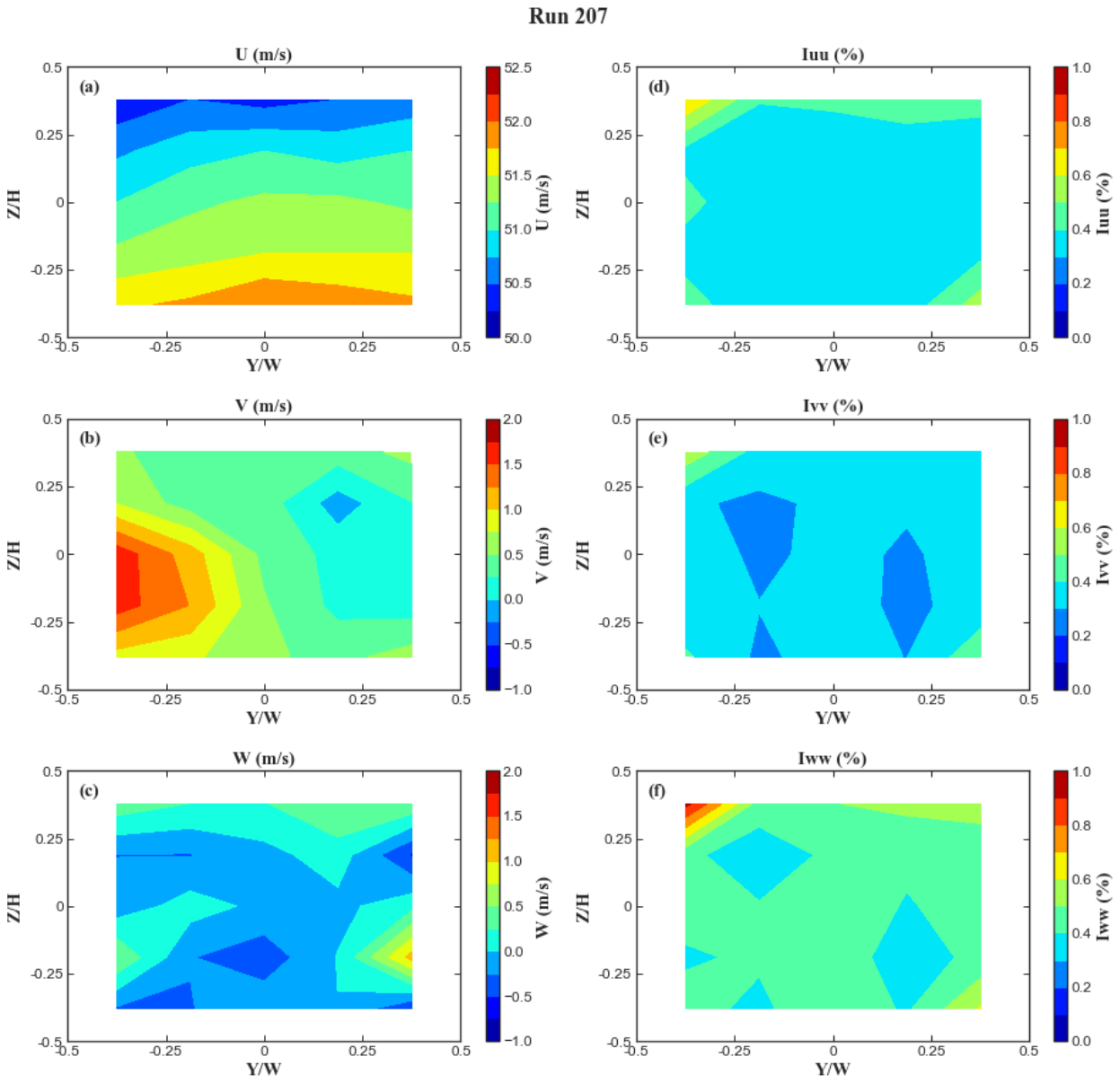

Run 202
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 203
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)


Run 204
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 205
U (m/s)
(a)
Iuu (%)
(d)
V (m/s)
(b)
Ivv (%)
(e)
W (m/s)
(c)
Iww (%)
(f)
Z/H
Y/W
U (m/s)
Iuu (%)
V (m/s)
Ivv (%)
W (m/s)
Iww (%)


Run 206
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)


Run 207
U (m/s)
(a)
Z/H
Y/W
U (m/s)
Iuu (%)
(d)
Iuu (%)
V (m/s)
(b)
V (m/s)
Ivv (%)
(e)
Ivv (%)
W (m/s)
(c)
W (m/s)
Iww (%)
(f)
Iww (%)