

## **Excerpt from the Juneau Empire, 19 October 2004**

**Gusts coming down Third Street in Douglas caught people's attention, too.**

**Sherill Baxter said she was cleaning at P.P.'s Douglas Inn at around 9:30 a.m. Monday when she heard the wind break things outside. "It was a pretty good gust."**

**She said that in addition to the door at the cafe breaking, it looked like the wind broke the back window of a vehicle parked on the street. She also noticed the gas station losing a garbage can that had been tied down.**

**The plastic container that held the windshield squeegee at the gas pumps blew away, too, he said. The container was retrieved. "*The squeegee is still lost.*"**

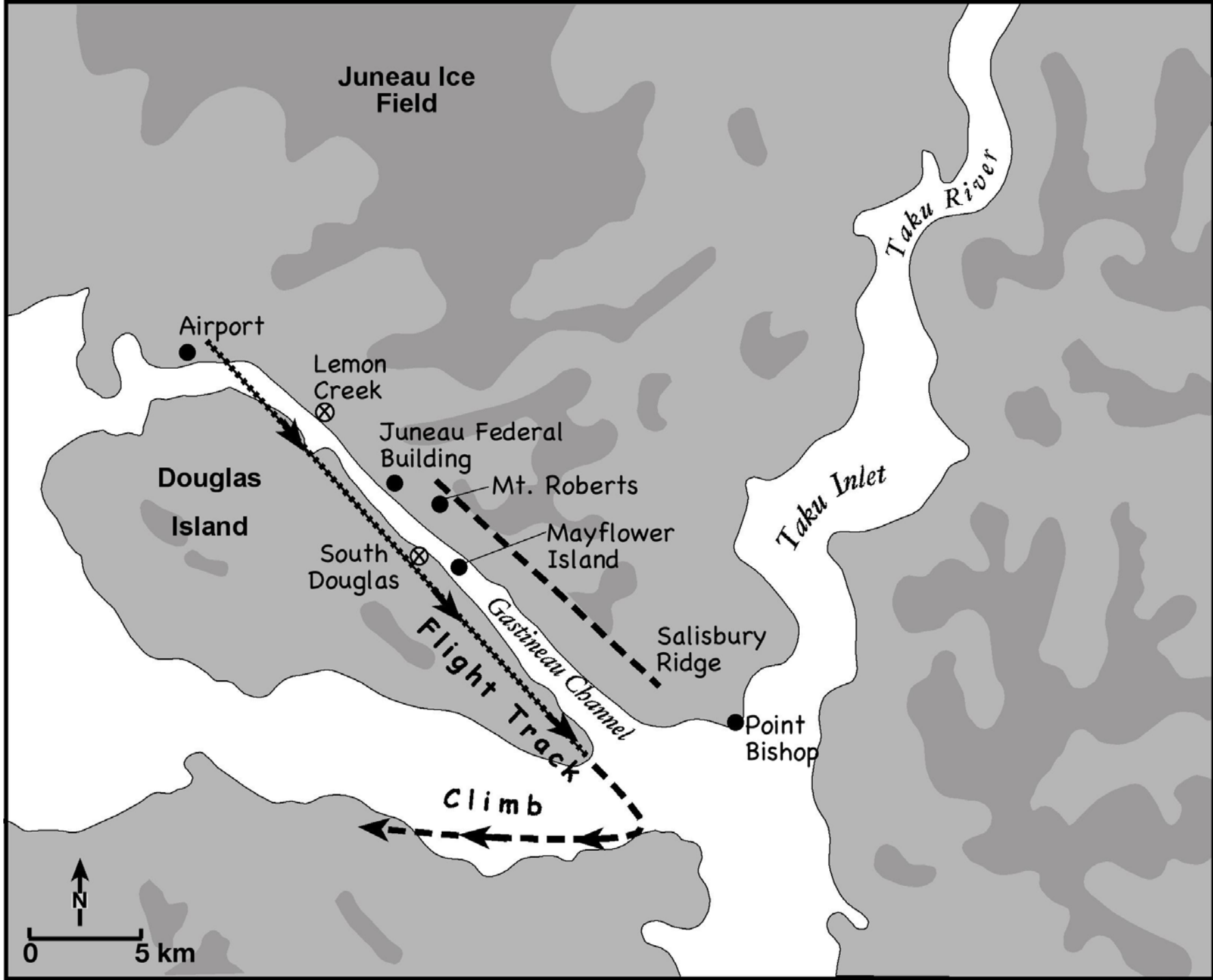
# Wind Profiler and Research Aircraft Observations in Gastineau Channel during the Taku Wind Event of 18 October 2004

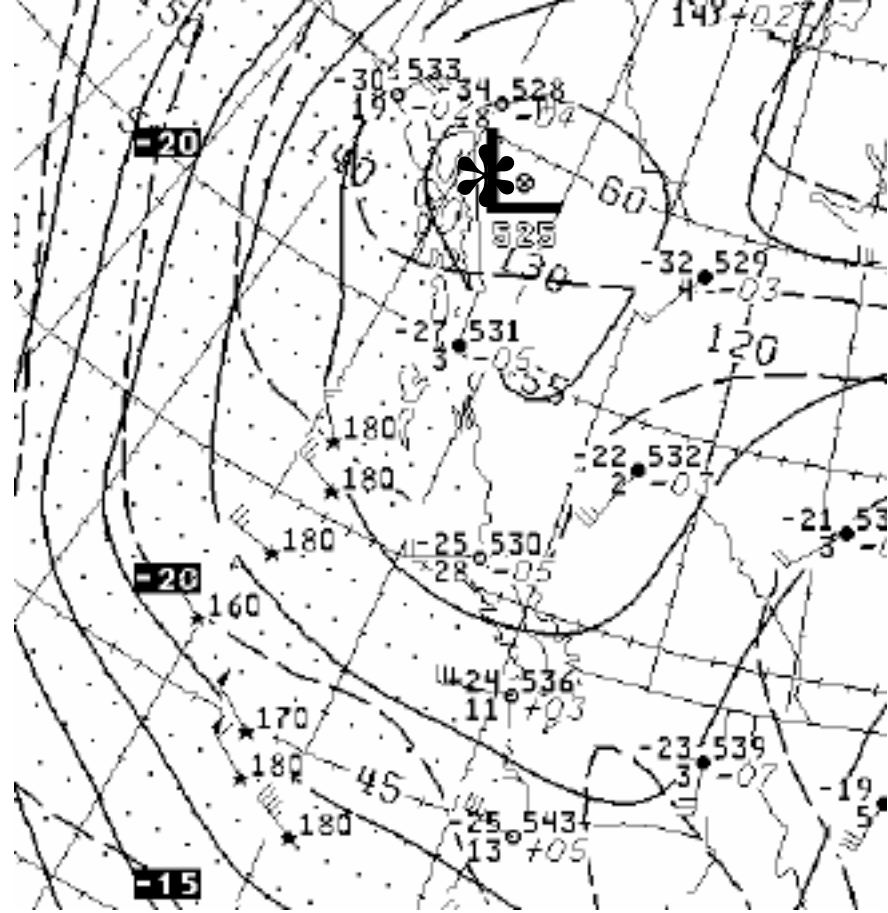
Nick Bond UW/JISAO

Carl Dierking WSFO Juneau

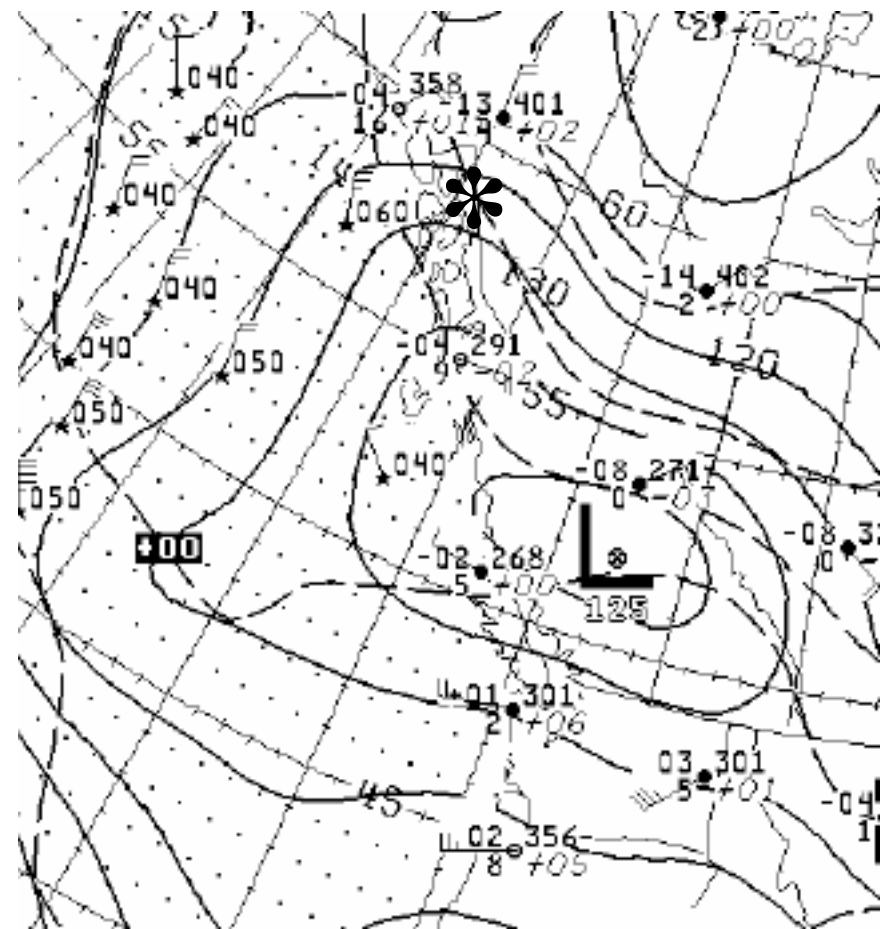
Jim Doyle NRL/Monterey

- Synoptic Setting & Local Winds
- Wind Profiler Data
- Research Aircraft Data
- COAMPS Output



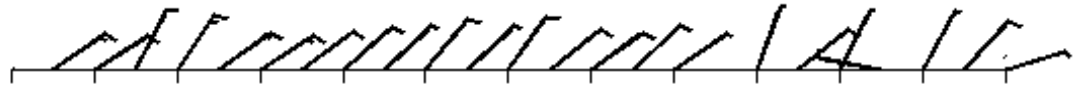


500 mb



850 mb

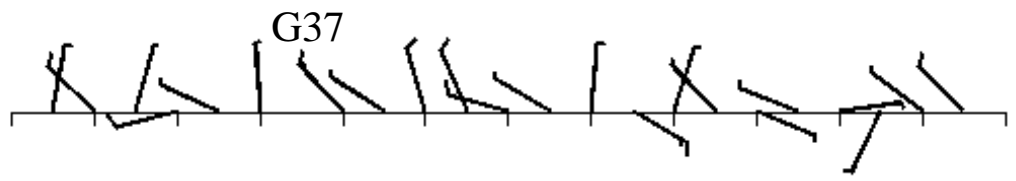
Lemon Creek



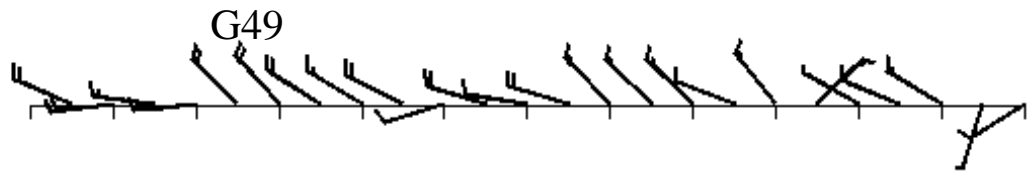
Federal Bldg.



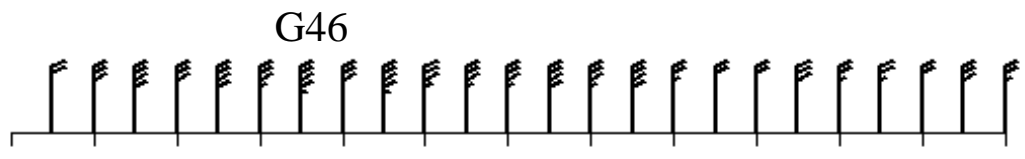
Mayflower Is.



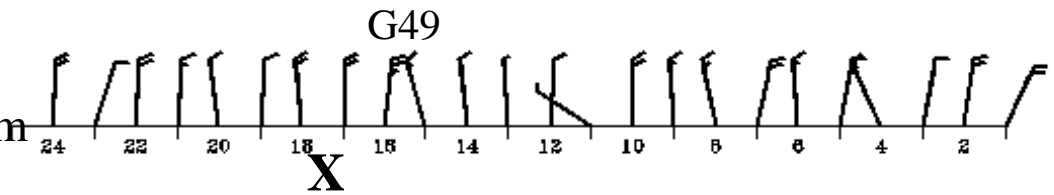
South Douglas



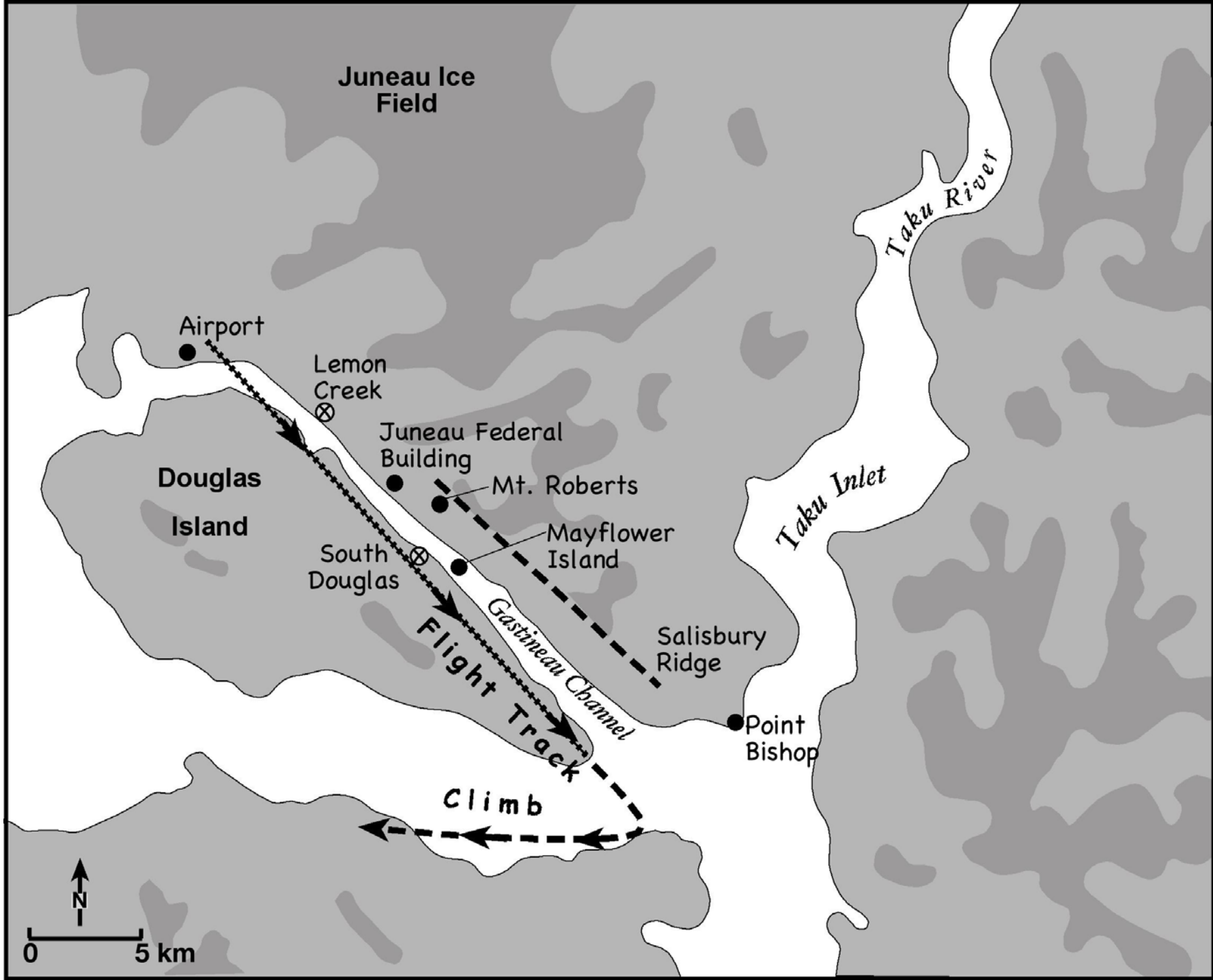
Point Bishop



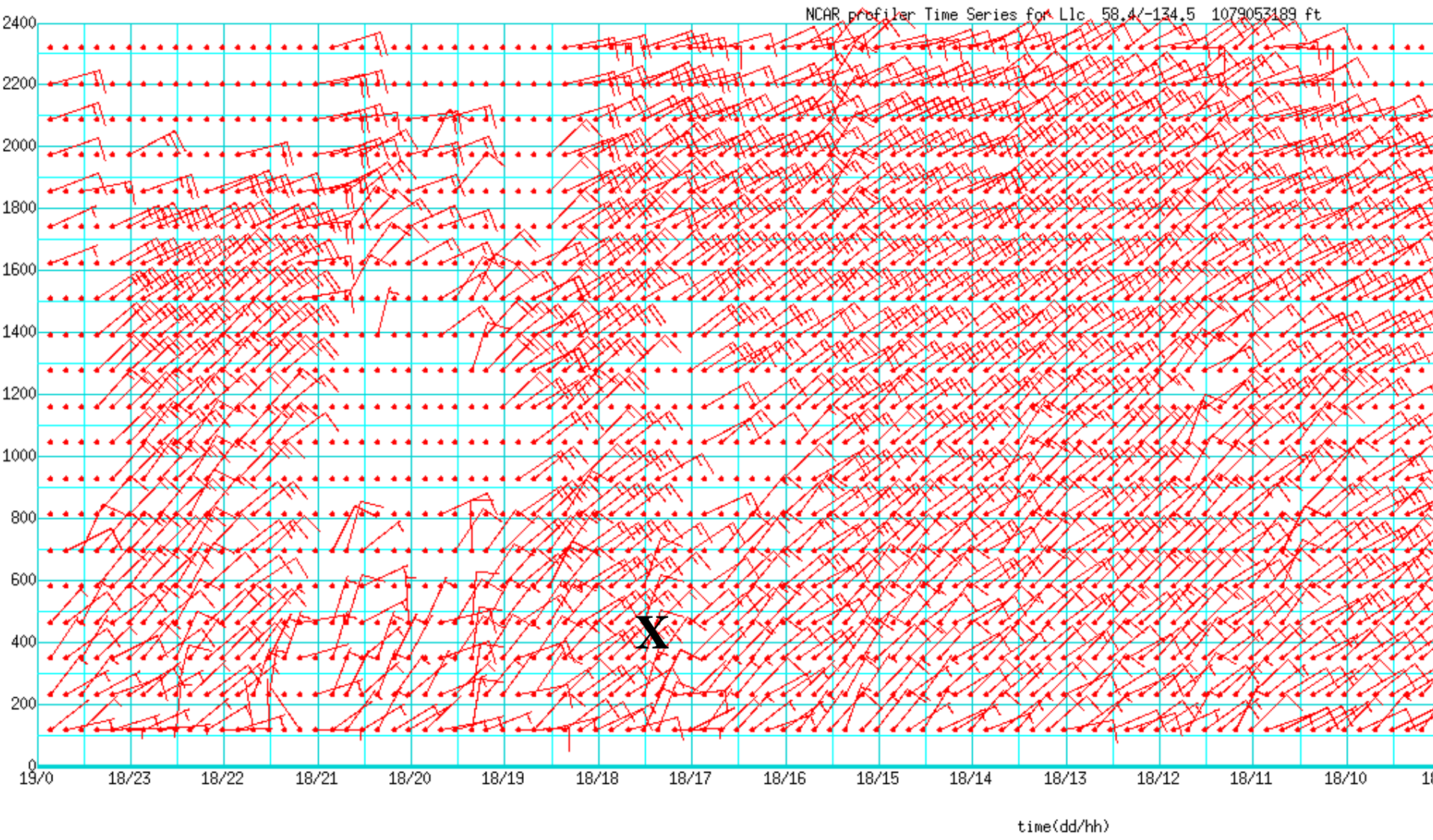
Mt. Roberts Tram



X

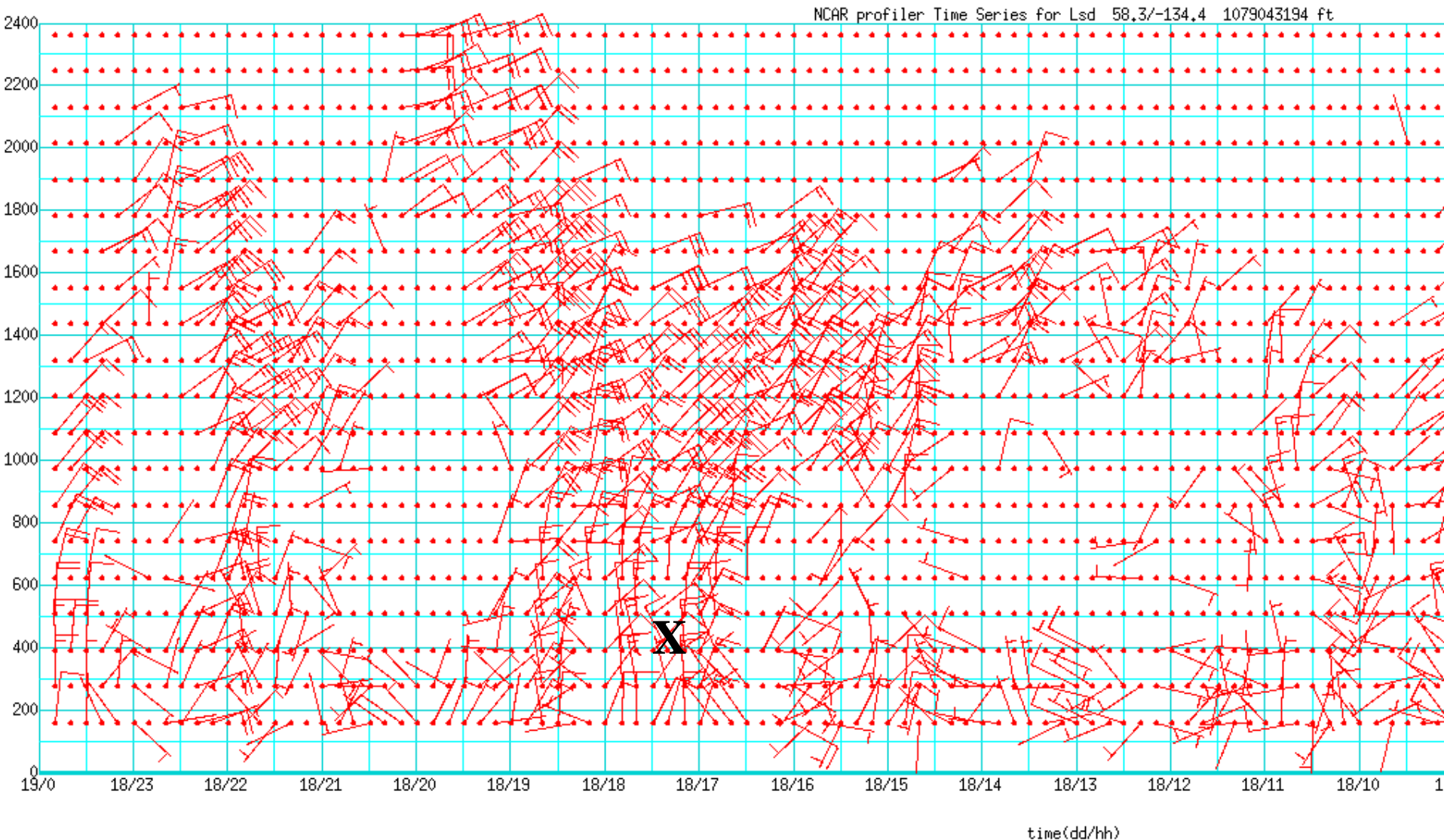


# Lemon Creek Wind Profiler

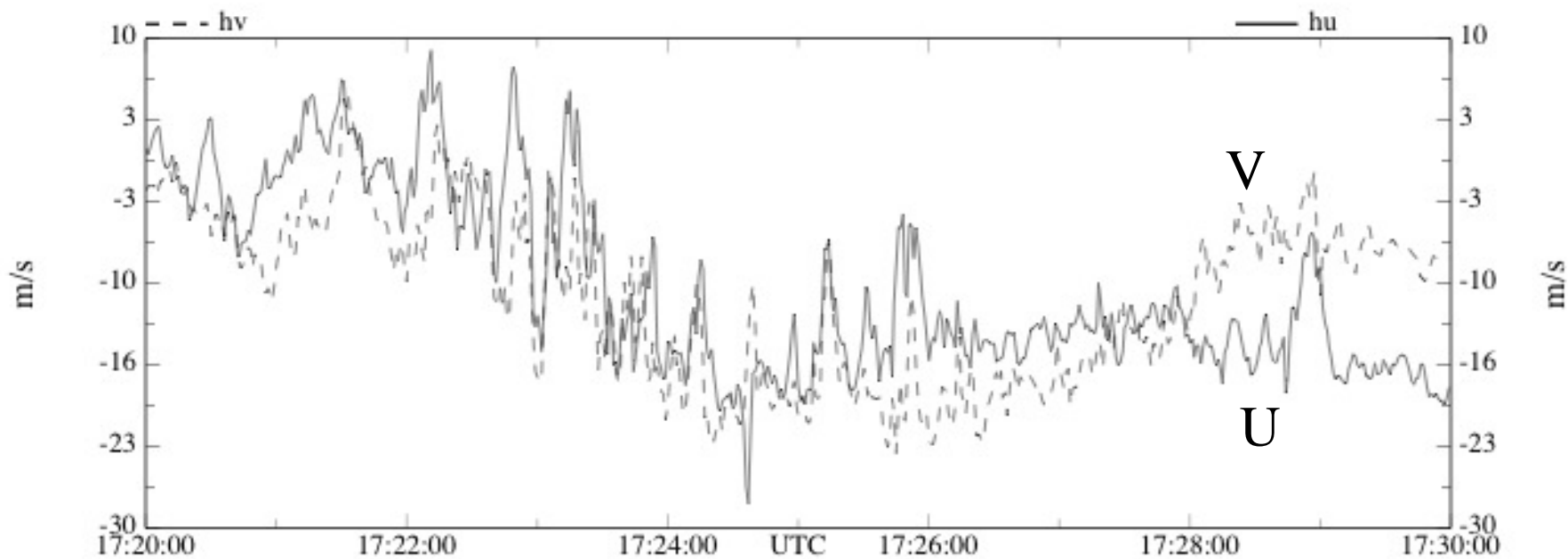
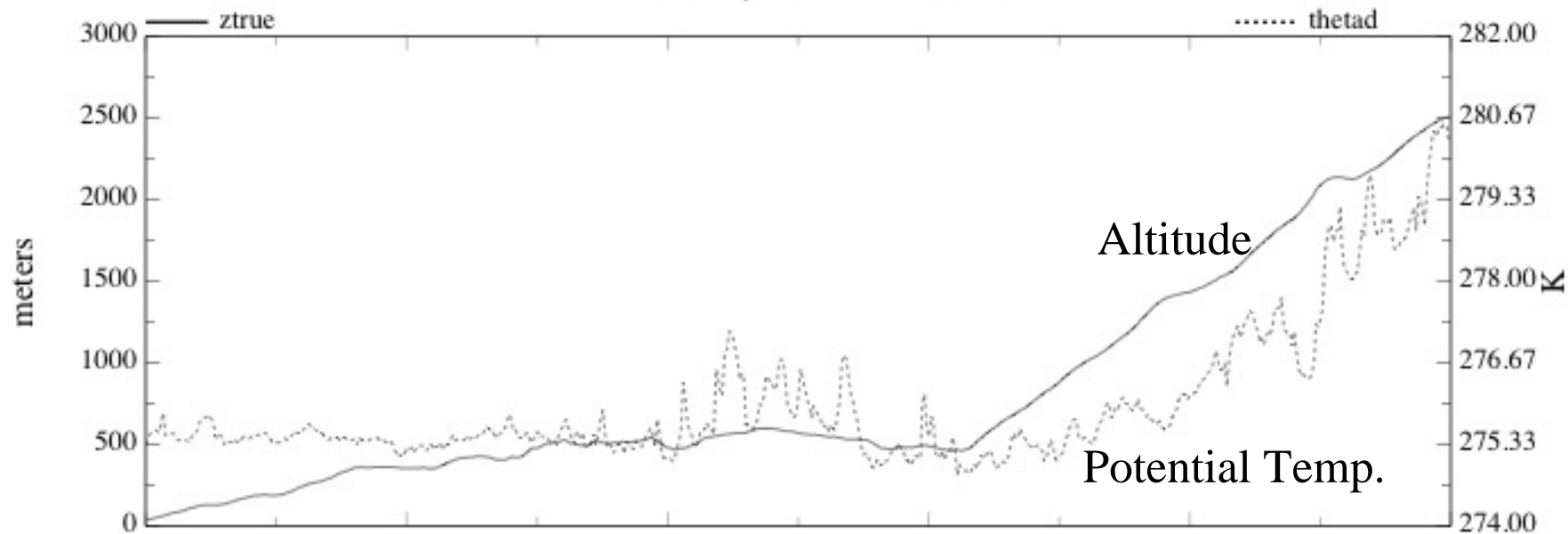


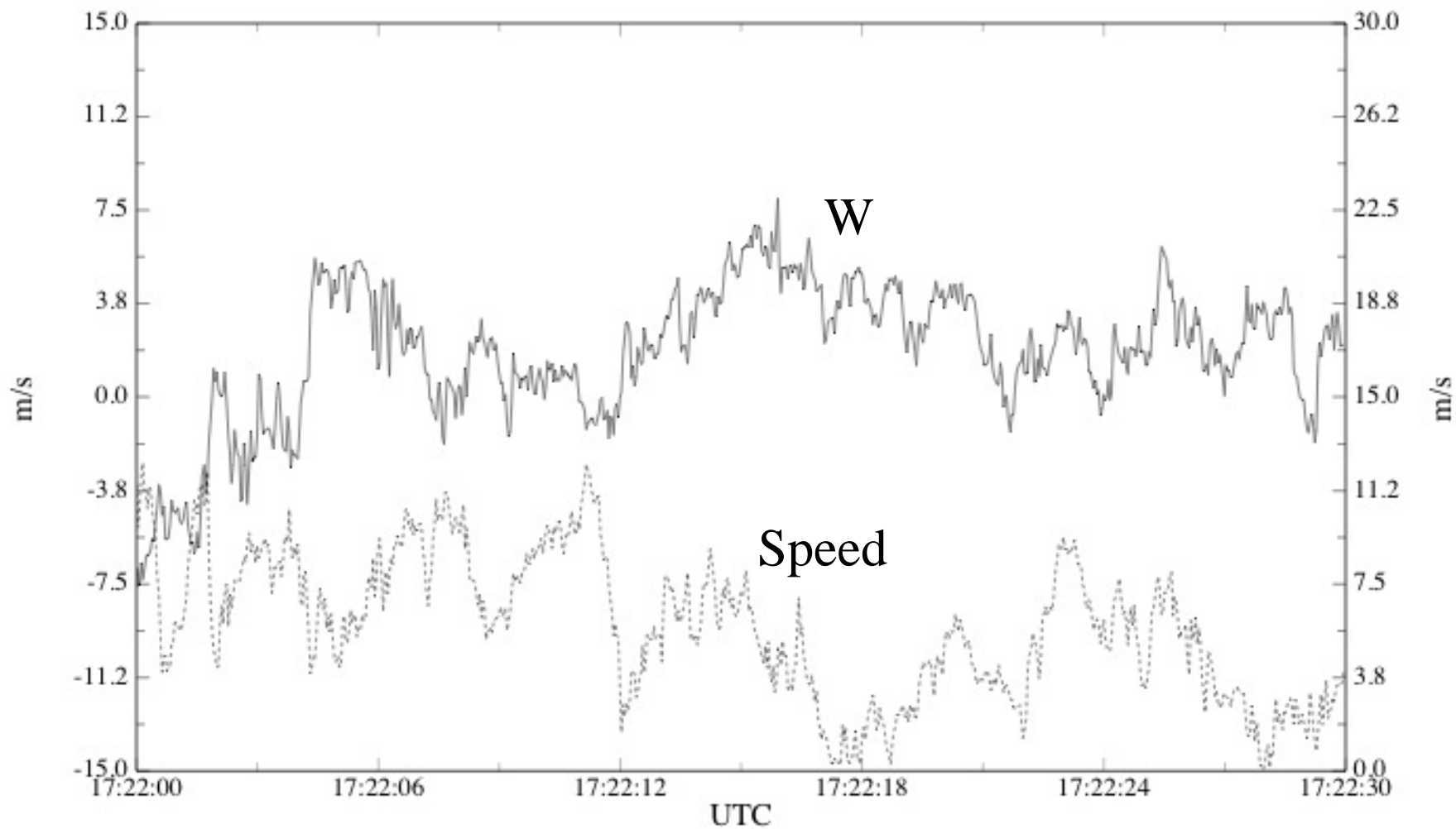


# South Douglas Wind Profiler

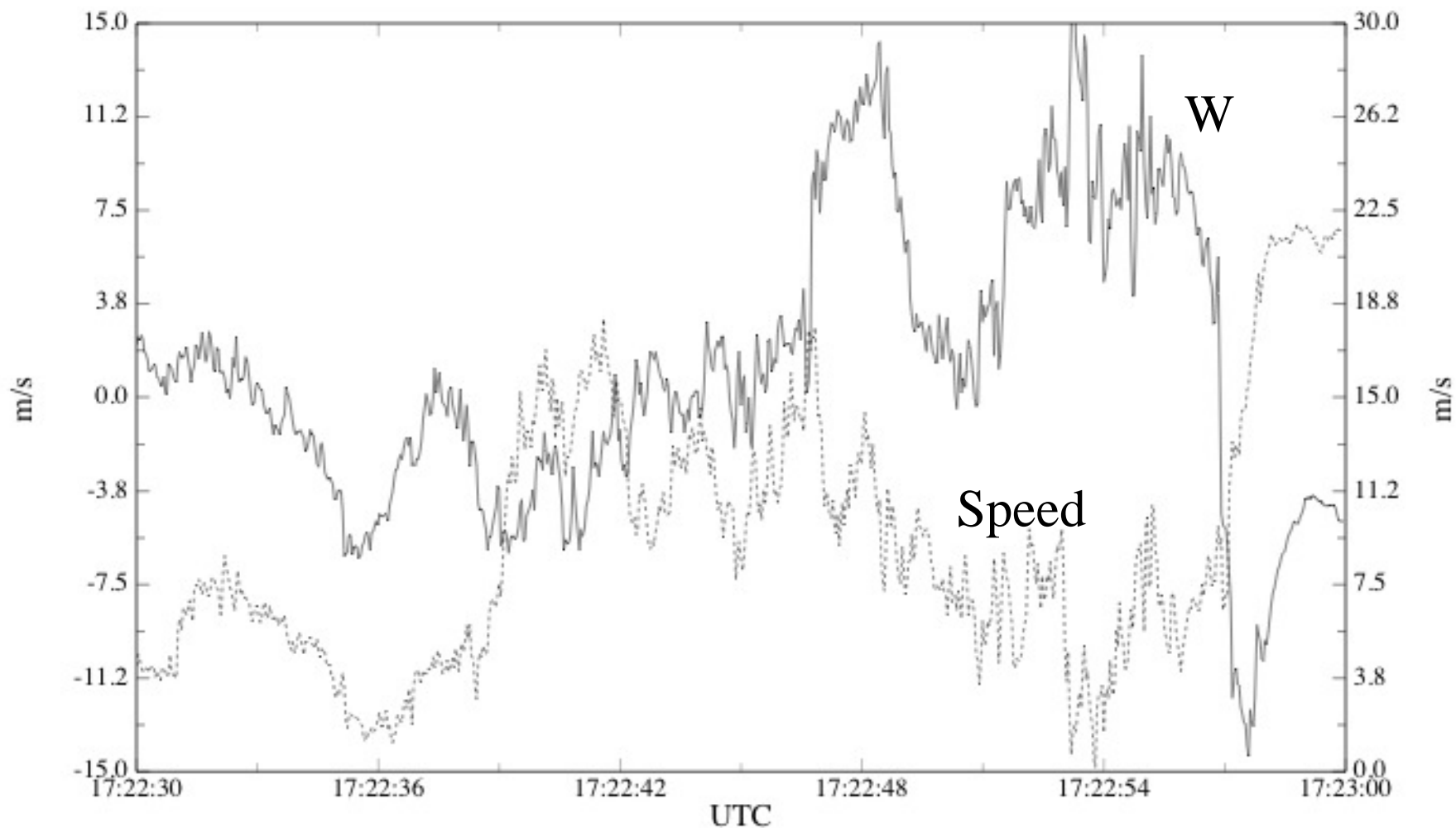


10/18/2004, 17:20:00-17:30:00

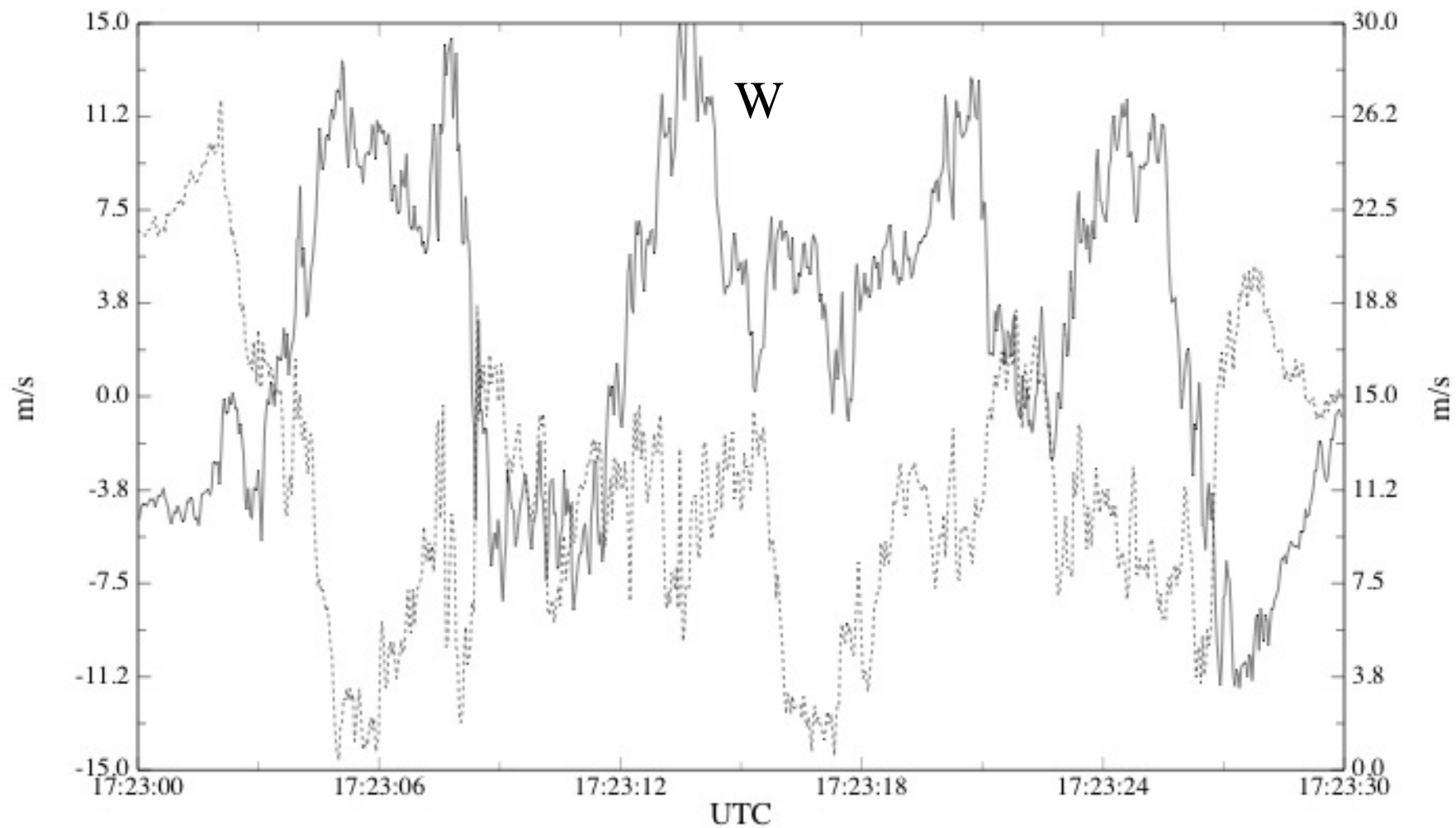




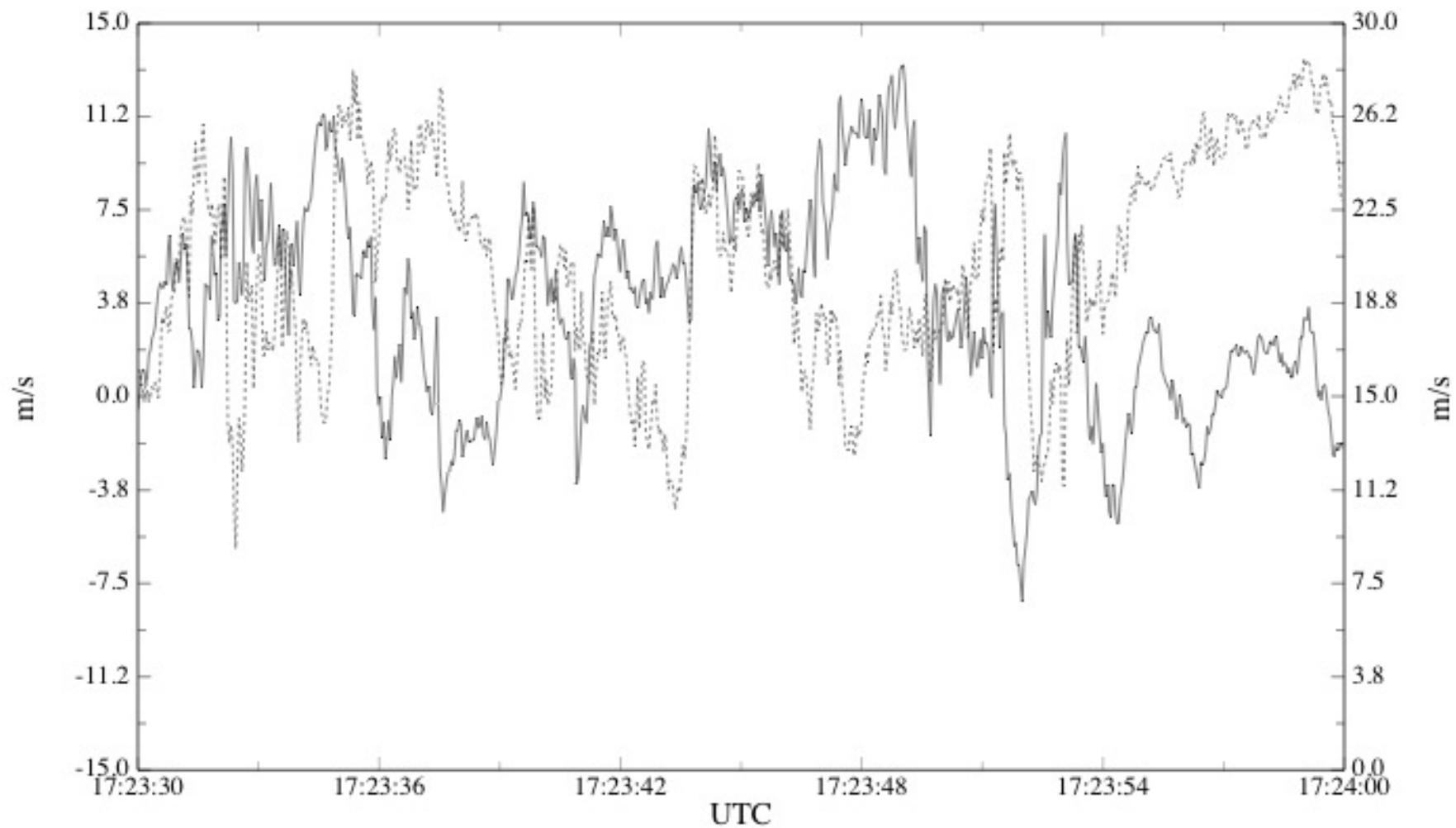
	mean	sigma	min	max	
—— hwmag (m/s), 25 s/sec	5.83	2.83	0.04	12.38	.....
..... hw (m/s), 25 s/sec	1.78	2.77	-7.64	7.98	



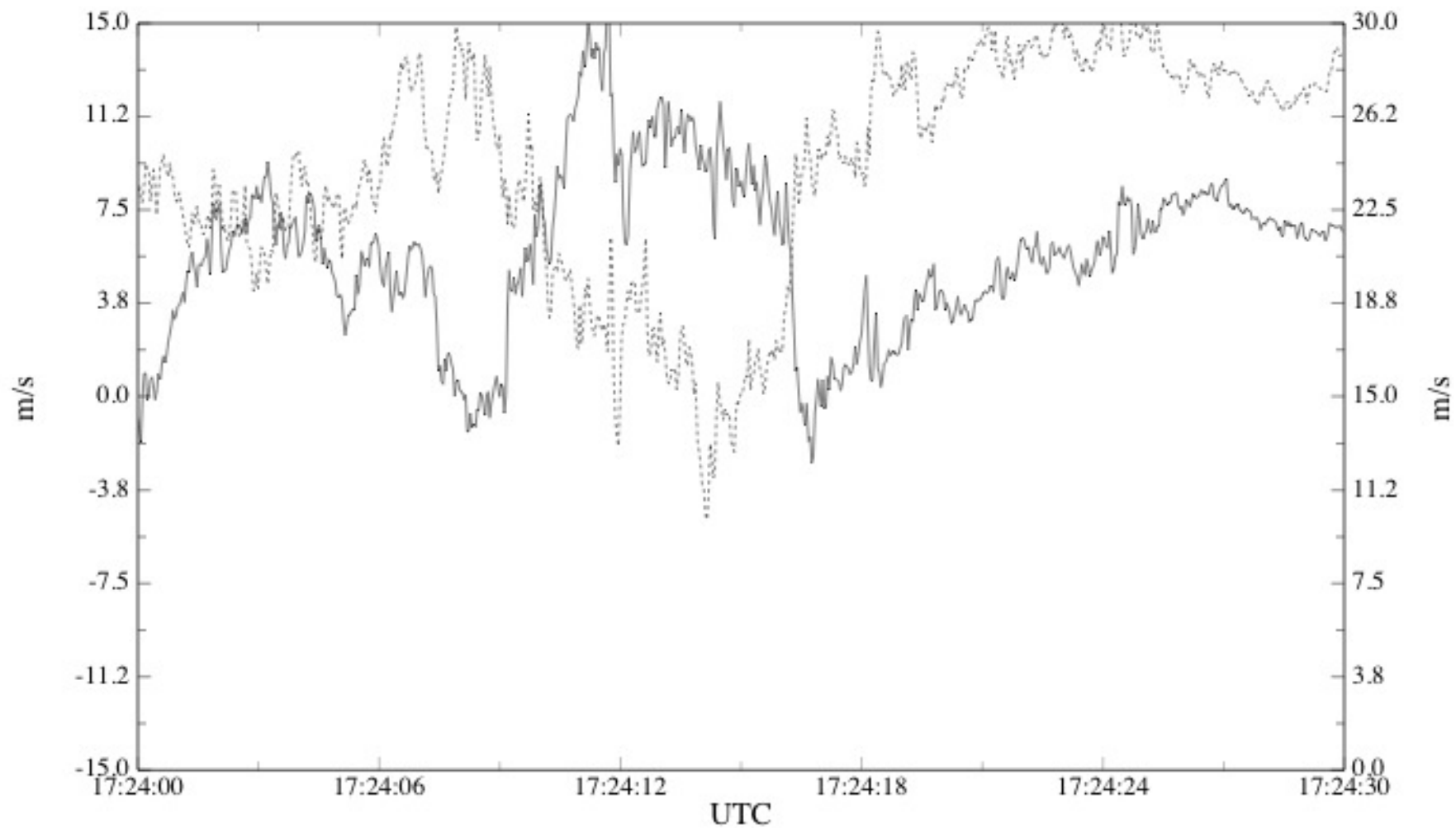
	mean	sigma	min	max	
—— hwmag (m/s), 25 s/sec	9.24	5.22	0.17	21.94	.....
..... hw (m/s), 25 s/sec	1.16	5.75	-14.37	16.71	



	mean	sigma	min	max	
—— hwmag (m/s), 25 s/sec	11.47	5.66	0.41	26.93	.....
..... hw (m/s), 25 s/sec	2.52	6.50	-11.70	19.20	



	mean	sigma	min	max	
—— hwmag (m/s), 25 s/sec	20.25	4.24	8.90	28.60	.....
..... hw (m/s), 25 s/sec	3.69	4.17	-8.23	13.32	



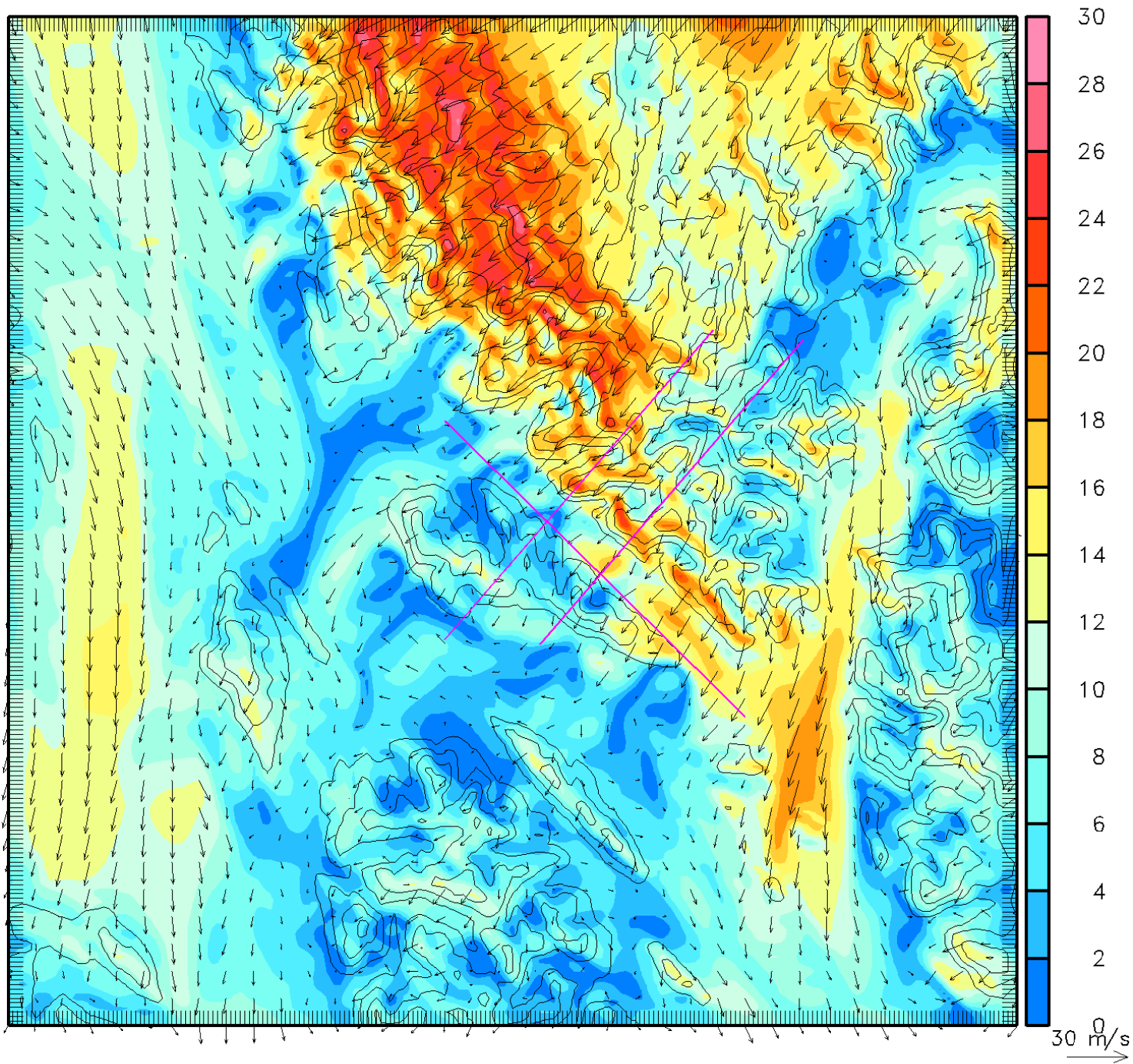
	mean	sigma	min	max	
—— hwmag (m/s), 25 s/sec	24.17	4.59	10.06	31.65	.....
..... hw (m/s), 25 s/sec	5.80	3.29	-2.66	16.37	

Table 1. Turbulence Parameters in Gastineau Channel

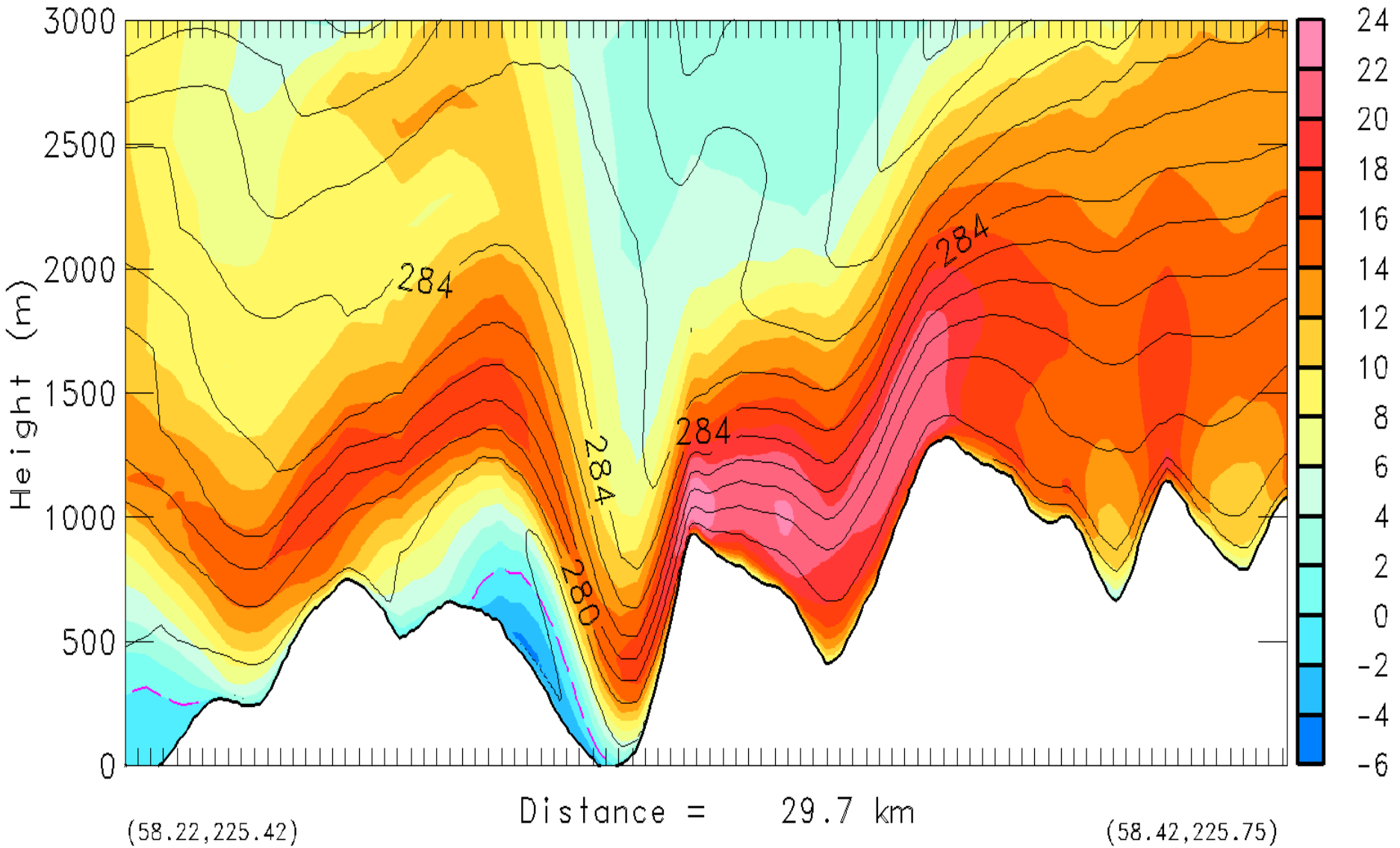
Time	$w$	$u'^2$	$v'^2$	$w'^2$	TKE	$\tau_x$	$\tau_y$	$F_h$
21:30–22:00	-1.3	3.1	1.7	4.2	4.5	1.7	-0.5	72
22:00–22:30	1.8	16.7	7.0	6.1	14.9	4.3	3.7	-12
22:30–23:00	1.2	29.9	17.2	30.9	39.0	24.0	12.3	283
23:00–23:30	2.5	34.6	30.9	41.4	<u>53.4</u>	19.7	26.2	49
23:30–24:00	3.7	15.2	14.5	15.7	37.3	-1.9	9.8	-123
24:00–24:30	5.8	9.6	11.5	10.6	15.8	3.7	10.0	-98
24:30–25:00	8.7	8.4	8.4	4.3	10.5	0.6	5.0	-603

$\tau_x$  and  $\tau_y$  refer to the zonal and meridional components of the momentum fluxes ( $\text{Nt/m}^2$ ), respectively;  $F_h$  refers to the sensible heat flux ( $\text{W/m}^2$ ). Linear trends in  $u$ ,  $v$ ,  $w$ , and temperature were removed in computation of the turbulence properties for each 30-second segment.

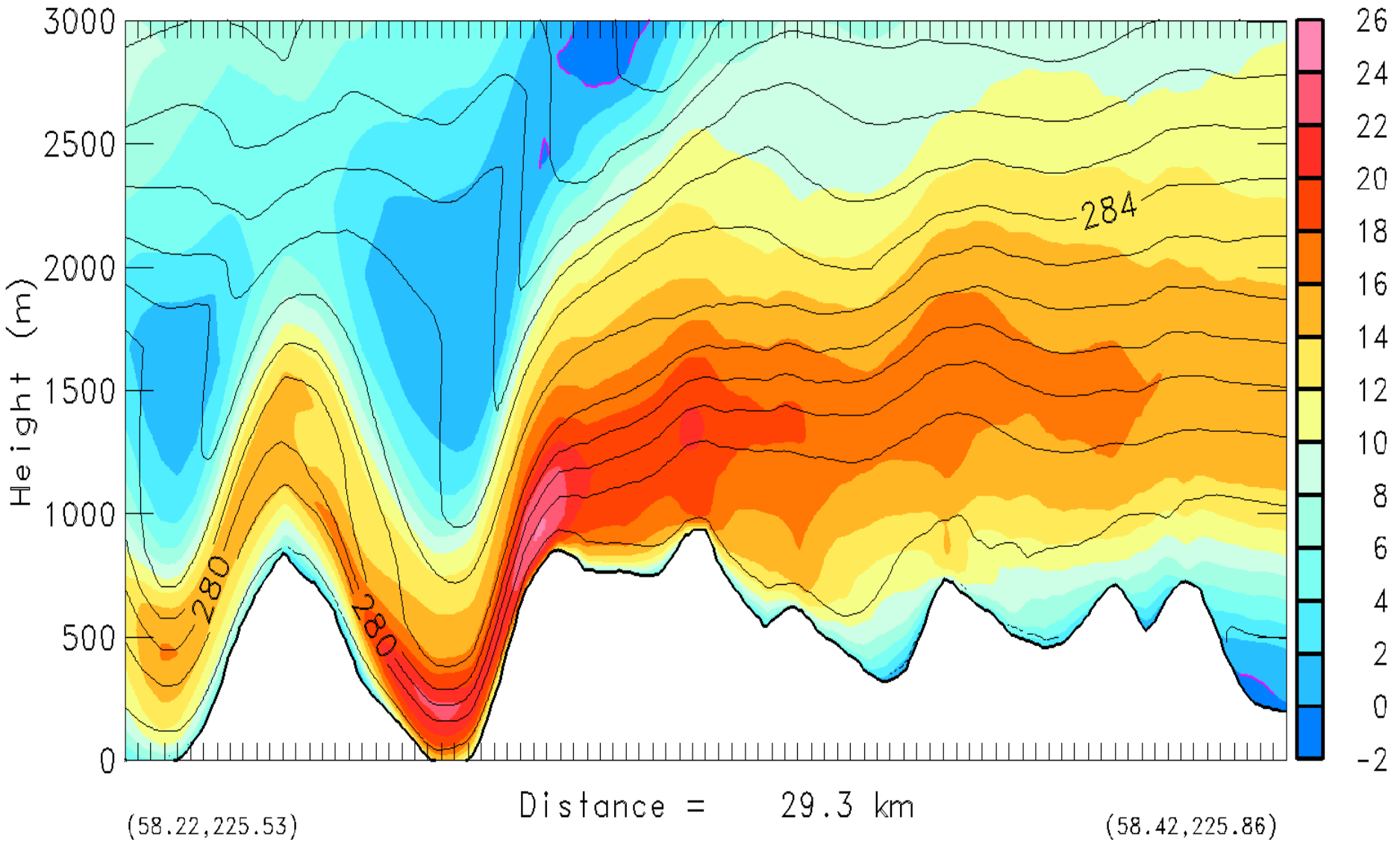




# NW Cross-Section



# SE Cross-Section



## Final Remarks

1. A moderate Taku wind storm occurred on 18 October 2004 during SARJET.
2. A research aircraft encountered extreme turbulence in a region of strong vertical wind shear on the flank of the strongest downslope flow.
3. A high-resolution (.33 km grid spacing) simulation by COAMPS reproduced the character of the mean flow in Gastineau Channel.