

Daily summary, July 6

July 6, [July 7 19:44 CDT]
Dan Rajewski (in Ames)

Summary: Stations 1-4 operational

ISU staff (Kris and Dan) serviced Station #4 around 11:45 CDT to update new tilt correction angle

An updated tilt correction was performed after having moving the sonic cross beam to replace the krypton hygrometer on July 5
Likely morning fog event, nearby towns had visibility ~0.5 mile
Daytime continuation of light winds from N to NE, warm, muggy conditions

Vdsm: 13.5-13.8 V during day, down to 12.3 at night

P: ok

T.2m: ok, stns 1-3 give erroneous data from 3:00-10:00 because of the morning moisture;
before dew/fog set in site 1 > site 2 (1.5 degrees) stns 3-4 also reading about 1.0 degree cooler than stn 1

RH.2m: 90-100% nighttime; 65% day

stns 1 5-7%RH lower than stn 4, stn 2-3 close together

erroneous data from 3:00-10:00 as in T.2m

H2O.2m: similar pattern as RH.2m,

erroneous data as in T.2m

Wetness: slight wetness the evening of July 5 (19:00 CDT) dew formation occurring from 22:30 July 5 to 7:00 July 6
sensor dry by 9:00 CDT

T.10m: ok, erroneous data occurring as in T.2m;

stn1 about 0.5 degree warmer than other sites from 1:30 to 2:30 CDT;

site 4 about 0.5 degree warmer than stns 1-3 for 'burn-off' of dew (8:15-9:00)

RH.10m: ok, similar occurrences of bad data as in T.2M

stn 4 has few%RH lower than stns 2-3 from 17:30 to 19:00

H2O.10m: ok see comments with RH.10m

Spd.10m: ok, late night jet possibly enhancing wind speeds at all sites from 23:00 July 5 to 3:00 July 6;

very little wind at all sites from 4:00-5:00 before increasing again (another cascade of LLJ energy?, what were the turbines doing?)

Dir.10m: ok, NW to N winds in night/morning; N to NE winds much of daytime

T.10m - T.2m: ok, similar at all sites in most of daytime

0.3 to 0.5 degrees warmer at stn2 than stn 1,3-4 from 0:00 to 1:00 July 6

H2O.10m - H2O.2m: ok, similar at all stns;

spd.4.5m: ok, from 0:00 to 2:00 stn 1 wspd about 0.8 m/s higher than stns 2-4; why is this not in Spd.10m?

another mid morning period (8:00-9:00) stn 1 about 0.5 m/s greater other sites

dir.4.5m: ok

w.4.5m: ok, few brief nighttime periods when stn 1 few cm/s $w < 0$ than at other sites

tc.4.5m: ok, for nighttime stn 1 about 0.5 degree warmer than stns 2-4 from 0:00-2:00

ldiag: ok

vh2ov: not ok, above 100 mV at stn 2 for most of period;

site 4 below 100 mV much of night and morning; does the sensor lens need cleaning?

kh2o: not ok, stn 4 greater than stn 2 by 10 g/m³ (is this more severe because of the high humidity environment?)

h2o(licor): ok, btwn 15-17 g/m³ for night to day behavior

ldiag (licor): ok

TKE.4.5m: ok, stn 1 about 2X stn 2-4 from 0:00-2:00 CDT

w'w': ok, see comments for TKE.4.5m, stns 2-4 less than stn 1 by 0.03 (m/s)² in same 0:00-2:00 period

u* : ok, similar behavior as in spd_4.5m, stn 1 slightly higher than stns 2-4 from 0:00-2:00

w'T' : ok, stn1 larger sfc cooling whereas other stations ~ 0 during 0:00-2:00

w'h2o': ok,

h2o'h2o': ok,

kh2o'kh2o': not ok; late morning separation from stn 4 > stn 2 by factor of 2

w'co2': ok, stn 1 & 3 are in close agreement most of daytime;

from 0:00-2:00 flux at stn 1 is about .0005 g/(m² s) greater than at stn 3

co2'co2': ok