

Daily summary, August 8

August 8, 21:08
Dan Rajewski (in Ames)

Summary: Stations 1-4 operational, no ISFS staff on-site, Russ and Dan serviced the wind cubes and Kris checked the ISU towers around 16:15-18:00 CDT,

late night/early morning thundershowers were replaced with mostly sunny conditions by late morning

winds light to moderate out of the NE to E before rain and NE to NW in the morning and WNW afternoon

**Krypton voltage about 100-150 mV, check the readings tomorrow morning before heading out to the wind farm; otherwise lens cleaning in order likely by Friday, also check bug screens on 2m TRH inlets

Vdsm: 13.4-13.7 V during day, down to 12.4 at night

P: ok, pressure steady in the overnight except during the storm passage (falling 4 mb) mostly steady pressure in the morning and afternoon

T2m: most of the night stations within about +/- 0.5 degrees C of each other; good daytime agreement

RH.2m: night: stn 4 about few%RH higher than stn 2, about 5%RH higher than stns 1,3; daytime: stn4 about few% RH higher than other sites

H2O.2m: night: stn 4 about 0.5-0.7 g/m³ higher than at other sites much of the night and daytime

Wetness: dew formation from 20:45 to 1:30, thunderstorm/showers from 3:00-3:30 and from 6:30-7:00, sensor dry by 8:15

T.10m: ok, stn 4 slightly warmer than other sites from 21:00-22:30; good daytime agreement

RH.10m: stn 2 about 7-10%RH lower than other sites at night and through early morning, day: agreement in all sites by 12:00

H2O.10m: night: stn 2 about 1.5 g/m³ drier than other sites, day: stn 2 about 0.5 g/m³ drier than other sites until 12:00, then good afternoon agreement

Spd.10m: ok, stn1 slightly higher speed and stn2 lower speed than sites 3-4 from 20:00-23:00; nighttime peak wind of near 6.0 m/s at 3:00

Dir.10m: ok, NE to E winds before rainfall, NE to NW winds in the early to late morning, WNW to NW in the afternoon

T.10m - T.2m: night: stn4 slightly warmer at 10 m vs. 2 m from 21:00-23:00, stn 1 coolest during that period, close agreement rest of nighttime and into the day

H2O.10m - H2O.2m: stns 1 & 3 mostly agree for day and night with near-zero moisture gradient, stn 2 about 1.0-1.5 g/m³ drier at 10 m vs. 2 m much of the night and up through 12:00, close agreement with stns 1 & 3 after that; stn 4 about 0.7 g/m³ drier at 10m vs. 2m during the night and about 1.0 g/m³ drier at 10m vs. 2m during the day

spd.4.5m: ok, similar for Spd.10m,

dir.4.5m: ok, see comments for Dir.10m

w.4.5m: ok, from 19:00-23:00 stn 4 velocity near 0 whereas other sites around 0.02 m/s; early to mid afternoon stn3 more descent (-0.04 m/s) vs. other sites, stns 2&4 slightly positive w

tc.4.5m: ok, stn 1 slightly cooler than other sites much of night, stn3 about 0.7-1.0 degrees C warmer than stn 1 from 3:30-4:30 and from 6:30-7:30 (effect of rain fall?), late afternoon stns 3 & 4 slightly warmer than stns 1 & 2

ldiag: ok

kh2oV: ok, near 150-200 mV in the night before the rain and also in the early morning through late afternoon, poor voltage signal from 3:00 to 7:30

kh2o: night: before rainfall stn 2 about 1.0 g/m³ wetter than stn 4; long period of high anomalous readings coinciding with rain event through 11:00 both about 4-5 g/m³ more moist than stns 1 & 3; daytime stn 2 about 2.0 g/m³ wetter than other sites, stn 4 about 3.0 g/m³ more moist

h2o(licor): ok, stn 1 about 0.5 g/m³ drier than stn 3 from much of the night; fields disrupted by rain from 3:00 to 10:00; close agreement by 11:00

liidiag (licor): ok, spikes during periods of rainfall

TKE.4.5m: ok, sites in good agreement, capturing a 3.0-4.0 (m/s)² spike around 3:00

w'w': ok, from 20:00-23:00 where stn 1 slightly higher than others sites otherwise similar to TKE.4.5m

** w'w' pattern is similar to v'v' but not u'u, but u'u' is about 3X stronger than v'v' so u'u' that masks the effect of v'v' in the TKE

u*: ok, somewhat similar to w'w', and v'v'; v'w' also similar to u*

w'tc': ok, night: same 20:00-23:00 period where stn 1 flux slightly more negative than other sites otherwise close agreement

tc'tc': ok, slightly higher variance at stn4 for a few periods up through 1:00; daytime: good agreement

w'h2o': ok, stns 2 & 4 begin condensing water from 0:00-1:30, other sites near zero flux, rest of night and early morning spurious readings at all sites up through 8:00 with Sites 1 & 3 and up through 12:00 at Sites 2 & 4

h2o'h2o' (licor): ok, several spikes in data during the night; good agreement by 8:00,

kh2o'kh2o': night: mostly in agreement until 1:00 with spikes in the data set then and right before onset of rain, variances unphysical after rain fall until about 11:00-11:30; stns 2 & 4 about 0.15 g/m²/s lower than other sites in the early afternoon, mostly in agreement with other sites for late afternoon-evening

w'co2': ok, night and day mostly in agreement, strong spike during period of rain around 3:30, stn1 slightly lower than stn3 from 10:30-11:30

co2'co2': ok, rain induced effect: stn 1 slightly higher (1*10⁻³ (g/m³)²) than stn 3 from 4:00-5:00; otherwise sites mostly in agreement in the night and daytime