

Daily summary, July 7

July 7, 21:20 CDT
Dan Rajewski (in Ames)

Summary: Stations 1-4 operational, no ISFS staff on site
Krypton hygrometer at stn 4 still giving anomalous readings (mean and variances)
vh2ov at stn4 is very low, so the sensor lens needs cleaning?
rain shower from 8:15 to 8:45 CDT
late morning clearing and generally sunny and stronger wind;
winds veering from ENE in overnight to WSW by early afternoon, NW to NE rest of the afternoon and evening

Vdsm: 13.5-13.8 V during day, down to 12.5 at night

P: ok

T.2m: ok, stn2 about 0.5-0.75 degree cooler than stn 1,3-4 from 1:30 to 3:00 (stn2 waked by far east turbine(s) in S22?)

RH.2m: 85-95% nighttime; 60-65% day

from 1:00 to 7:00 stn 2 3-5%RH higher than stn 1,2-4, stn 1-3 close together

stn 1 5%RH lower than other sites in mid morning (9:30 to 11:00)

stn 4 about 5% RH higher than other sites in early evening

H2O.2m: ok

Wetness: sensor response to mid morning rain showers
sensor dry by 12:00 CDT

T.10m: ok, see comments for T.2m

RH.10m: ok, stn 2 about 5%RH higher than other sites from 1:00 to 2:00

stn 4 has few%RH lower than stns2-3 from 17:30 to 19:00

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

Spd.10m: ok, stn 2 less wind (0.75 m/s) than other sites from 1:00-2:00, good daytime agreement at all sites

Dir.10m: ok, ENE to WSW winds in night-early afternoon, back to northerlies in late afternoon/evening

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

0.5 degrees warmer at stn2 than stn 1,3-4 from 2:00 to 3:00

H2O.10m - H2O.2m: ok, stn4 2% lower vapor concentration (drier at 10m vs. 2m) than other sites for much of afternoon 2:00-6:00 CDT

spd.4.5m: ok, see comments for Spd.10m

dir.4.5m: ok

w.4.5m: ok,

tc.4.5m: ok, for nighttime stn 2 about 0.6 degree cooler than stns 2-4 from 0:00-2:00

ldiag: ok

vh2ov: not ok, at stn 2 above 100 mV before and after rain;

stn 4 voltage is at or less than 15 mV, likely needs to be cleaned

kh2o: not ok, stn 4 greater than stn 2 by 10 g/m³

h2o(licor): ok, btwn 15-19 g/m³ for night to day behavior

ldiag (licor): ok, some warnings during the morning shower

TKE.4.5m: ok, stn 2 about 50% less than stns1,3-4 1:00-3:00 CDT (wake from several turbines in oblique wind direction ESE?)

w'w': ok, see comments for TKE.4.5m, stns 2-4 less than stn 1 by 0.06 (m/s)² in same 1:00-3:00 period

u* : ok, similar behavior as in TKE4.5m, w'w', also in fluxes of u'w' and v'w'

w'T' : ok, stn2 slightly less cooling than other sites for 1:00-2:30;

stn4 slight cooling vs. neutral cooling at other sites at the moment of the cloud breakup (10:30-11:30 CDT);

stn4 less positive heat flux in late afternoon than other sites

w'h2o': not ok, lots of fluctuation at stn4 in night time (krypton problem), better agreement in afternoon

h2o'h2o': ok,

kh2o'kh2o': not ok; night and daytime separation from stn 4 > stn 2 by factor of 3-4

w'co2': ok, stn 1 & 3 are in close agreement most of the diurnal period

co2'co2': ok