

Daily status, August 1

AHATS (sometime)daily status 8/1/08 (4 days since the last status...)

Staff: Semmer, Oncley, Nguyen, Tudor with ISS
Bruce (and Amy) Roberts visited yesterday (July 31).

Temps: 99F/61F yesterday, even a bit cooler 2-3 days ago.

Sorry, we've had major activities since the last status:

- July 29 we reconfigured to array #3, though it is lower than originally planned (now 5&6m) as a hedge against getting good pressure data from array #2.
- July 29/30 we had (good) visits by Roger Wakimoto and John Wyngaard, including good discussions about pressure with John.
- I had to take an AHATS break on July 30 to get the revisions on my TRAM paper done. It is now resubmitted!
- Yesterday we pulled down the horizontal array to (better) level the sonics and to implement John's suggestion of foam insulation around the Pref tubing.

For more details, see the ahats logbook at <https://wiki.ucar.edu/display/ahatslogbook>

Good wind direction:

array#2 (jul 20 16:00-jul 29 06:00) ended up with 67 hours (22 unstable, 45 stable). It was lengthened a bit to allow more time in the <better> pressure configuration. There also had been some data system failures resulting in the loss of ~5 hours of data.
array#3 (jul 29 12:30-present) now has 18 hours (2 unstable, 16 stable). We shouldn't have lost much during yesterday's work since directions were bad. [this statistic actually is low since need covar_redo]

Local data storage: (we downloaded everything on 30 July)

```
upwind:/dev/sda1 57685532 5281796 52403736 9% /var/tmp/usbdisk
downwind1:/dev/sda1 57685532 5875748 51809784 10% /var/tmp/usbdisk
downwind2:/dev/sda1 57685532 6874668 50810864 12% /var/tmp/usbdisk
profile:/dev/sda1 57685532 3836724 53848808 7% /var/tmp/usbdisk
pressure1:/dev/sda1 3897204 1180848 2716356 30% /var/tmp/usbdisk
pressure2:/dev/sda1 3897204 1242284 2654920 32% /var/tmp/usbdisk
```

```
aster:/dev/sdb1 721075720 355606092 365469628 50% /media/isff2
isff:/dev/sdc1 1922890480 532559304 1292653972 30% /media/isff15
(although big, isff15 now has essentially 3 copies (WiFi, local storage,
and merge) of the entire data set.)
```

We'll send a few DVD's of data back with Steve tomorrow.

Pressure:

(+/- = ~1 std deviation among variables at the same height)

- 11.b is still measuring Pref with the 202BG connected between the AHATS and CHATS references. We've just added insulation to the Pref tubing, but it seems to only have a minor effect.
- pressure2 crashed yesterday

p: ok, +/- 0.03 mb
p'p': ok, +/- 0.0005n mb^2
w'p': ok, +/- 0.002 m/s mb
t: 6b&6t are outliers by 3degC during day, others +/- 1.5 degC
Pref: ok -- has moved a lot during several changes
P: ok

Profile: [,select.p]

T: ok
RH: sensor that is now at 5.8m is strange. Since sonics are now at this level, we may work to fix it.

diag: ok
samples.sonic: ok
spd: ok?, 8m still lower than 7m sometimes. We'll change 8m out during the next configuration switch.
dir: ok
w: ok
tc: ok, 8m low by -0.3 degC? (related to the speeds being low as well?)
w'w': ok
u*: ok, some imaginary values with light winds
sigma_w/u*:
w'tc': ok
h2o: normal, 2 g/m³ offset from dat("Q"), except in afternoon.
w'h2o': ok, 0.03 m/s g/m³ at midday
co2: ok, 15-20 mmol/m³ (some nights have large values, some don't [last night]). Presumably related to shallow nocturnal boundary layers, but I haven't gone through the sodar data yet.
w'co2': ok, -0.01 m/s mmo/m³ at midday

Upwind (hts=4.8): [,select.u]

Has crashed each of the last 5 nights at about 10pm. Last night stayed down due to a certain SE trying to help. We've replaced the Viper CPU board so hopefully it will work tonight.

diag: ok
samples.sonic: ok
spd: ok, +/- 20 cm/s
dir: ok, need new angles again...
w: ok, +/- 5 cm/s
tc: ok, +/- 0.2 deg, biases somewhat larger
w'w': ok, +/- 0.005 m²/s² (30 min avg for second moments)
u*: ok, +/- 2 cm/s, some imaginary
sigma_w/u*:
w'tc': ok, +/- 0.01 m/s degC
tc'tc': ok, +/- 0.05 degC²

Downwind Lower (hts=4.8): [,select.b]

diag: ok
samples.sonic: ok
spd: ok, +/- 20 cm/s, perhaps less scatter after move
dir: ok, need new angles again... (not seeing big changes since move yesterday)
w: ok, +/- 15 cm/s [need to check tilt angles]. Most negative.
tc: ok, +/- 0.2 deg
w'w': ok, +/- 0.01 m²/s² (30 min avg for second moments)
u*: ok, +/- 2 cm/s, some imaginary
sigma_w/u*:
w'tc': ok, +/- 0.01 m/s degC
tc'tc': ok, +/- 0.05 degC²

Downwind Upper (hts=5.8): [,select.t]

diag: ok
samples.sonic: ok
spd: ok, +/- 10 cm/s, perhaps less scatter after move
dir: ok, +/- 2 deg, need new angles again...(not seeing big changes since move yesterday)
w: ok, +/- 5 cm/s
tc: ok, +/- 0.2 degC, offsets up to 0.6 degC
w'w': ok, +/- 0.01 m²/s² (30 min avg for second moments)
u*: ok, +/- 2 cm/s, som imaginary
sigma_w/u*:
w'tc': ok, +/- 0.01 m/s degC
tc'tc': ok, +/- 0.05 degC²
