

Updated 5 minute statistics in NetCDF

The 5 minute statistics of data from the turbulence tower, for the entire dataset, Jul 8 2009 to the present have been recomputed, and written to the NetCDF files. The new values incorporate the following changes:

- In each 20 Hz sample from a CSAT3 sonic, if any of the CSAT diagnostic bits are non-zero, then the values for that sample (u,v,w,tc) are marked as missing, and not added to the 5 minute statistics. This should result in better 5 minute statistics by excluding data when the transducer signals are poor, such as during rain.
- The calculation of the CSAT3 sonic diag value has changed. Previously the high-rate value could vary from 0 to 31, depending on which diagnostic bit was set. Now the high-rate diag value is just a 0 (no bits set) or 1 (one or more bits set), and the average is now the fraction of time in the 5 minute period that one or more diagnostic bits were set.
- The LICOR 7500's have a inherent sampling lag of 0.186 seconds, as documented in the manual from Licor. Our previous processing did not account for that lag when computing covariances between the sonic winds and the h2o and co2 from the Licor. This could result in increased values for the computed fluxes of water vapor and CO2.
- Units of CO2 have been changed from mmol/m³ to g/m³, the same as for H2O from the 7500s.