Chelle

I have processed the satellite SST estimates you sent with the pre-CALWATER2 G-IV sondes.

The results are pretty encouraging.

I have attached a word doc with some graphs of each day and a grand comparison.

SST statistics from pre-CALWATER2 G-IV dropsonde analysis.  Three estimates of SST are obtained from the dropsondes based on extrapolation of the profiles to the surface.  Both air temperature (T) and air humidity (q) provide estimates.  The final value, Tss2, is based on bulk flux estimates and surface roughness length.  Satellite estimates provided by Chelle Genteman.  Satellites are designated: microwave, AMSR, wsat, TMI, and MODIS.  A single satellite estimate, sst\_sat, is created as the median of these five.  Standard deviation (std) of the five satellite estimates at each location is about 0.5 C.  A grand comparison of satellite and sonde SST estimates for the five flights is shown in the attached file.  For a total of 119 locations, the mean of Tss2-sst\_sat is about -0.02 C and std of Tss2-sst\_sat is about 0.76 C; the correlation coefficient is 0.983.

There appears to be essentially 0 bias between dropsondes and satellite temperatures.  That is pretty amazing.  Scatter between individual estimates at one location is on the order of 0.76 C.  Not sure of the significance.  That seems a little large, but I have no experience in this regard.  Remember, the sondes are not actually measuring SST but the T profile, which we essentially extrapolate to the surface.

Thanx for providing the satellite data, it really helps to have some confirmation of our SST estimates.

Regards, CF











SST statistics from pre-CALWATER2 G-IV dropsonde analysis. Three estimates of SST are obtained from the dropsondes based on extrapolation of the profiles to the surface. Both air temperature (T) and air humidity (q) provide estimates. The final value, Tss2, is based on bulk flux estimates and surface roughness length. Satellite estimates provided by Chelle Genteman. Satellites are designated: microwave, AMSR, wsat, TMI, and MODIS. A single satellite estimate, sst\_sat, is created as the median of these five. Standard deviation (std) of the five satellite estimates at each location is about 0.5 C. A grand comparison of satellite and sonde SST estimates for the five flights is shown on the next page. For a total of 119 locations, the mean of Tss2-sst\_sat is about -0.02 C and std of Tss2-sst\_sat is about 0.76 C; the correlation coefficient is 0.983. For SST deduced from the humidity profile, the mean of Tss2-Tdew is 0.20 C, the std is 1.26, and the correlation is 0.953.



