U of MIami Radiometer, Status Report, Oct. 16

- Daily vertically-integrated water vapor content (WVP) and liquid water content (LWP) time series are being created and posted on the DYNAMO EOL field catalog. These rely on the same coefficients (relating 23 and 30 brightness temperatures to WVP and LWP) currently in place for the 2-channel DOE radiometer. These were created by DOE microwave mentor Maria Cadeddu using historical Gan soundings. The values are preliminary and will be updated using coefficients drawn from the DYNAMO Gan soundings at a later date. Maria Cadeddu and I are coordinating our efforts, so that comparisons between the DOE and UMiami radiometer data will contain real information about WVP, LWP differences between the two sites spaced 11 km apart. The time resolution is irregular: after an initial 5-minute time gap spent on low-elevation scans, the radiometer does regular vertical scans approximately every 30 seconds, or about 20 in the remaining 10 minutes.

- Calibration values, drawn from dedicated scans at 30 and 45 degrees elevation at two opposite azimuths ("tipping calibrations") were first incorporated into the radiometer brightness temperatures on Oct. 7. These reflect local conditions more closely. Hence the posted WVP and LWP time series begins on Oct. 8.

- The microwave-derived WVPs agree better with the sonde-derived values from Oct. 10 on, possibly because the calibration improved with more locally-derived tip-cals becoming available. The radiometer LWPs show a non-zero offset under clear skies and a spurious diurnal cycle.

- The 89 GHz channel is not working and will not be used for the duration of DYNAMO

- A new constant-elevation scan at 15 degrees elevation was implemented on Oct. 15. This was done to help assess the contribution of surface emission/reflection, if any, to the low-elevation scans.

- The radiometer has been functioning continuously since Oct. 6 with no motor dysfunctions.

- The low elevation scanning pattern has been checked against that of Spol and is overlapping with S-Pol low elevation scans sufficiently. The radiometer scanning pattern takes 15 minutes and 1 second, so that its overlap with S-Pol scans retrogrades slightly during the course of 24 hours, after which it is reset as a Windows Sheduled Task.

- Work on the UM radiometer dataset is being done in collaboration with the DOE microwave mentor Maria Cadeddu. There should be no retrieval or intrument bias in final values, allowing comparisons between the two radiometer datasets to reflect meteorological differences. The two sites are spaced 11 km apart.

Gan October relative humidity & u,v winds