



Thermodynamic Profile Uncertainty Characterization

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Uncertainty Characterization of Thermodynamic Profiles (1)

- 8 AERIs (at all 6 FPs and in 2 MPs)
 - Self-calibrating; confirm with clear sky LBLRTM comparisons
 - Retrievals using AERloe algorithm for all AERIs
 - Physical-iterative retrieval using optimal estimation approach, full error covariance matrix for each retrieval
 - Plan is to have real-time quicklooks of these retrieved profiles
- 5 MWRPs (3 in FPs, 2 in MPs)
 - LN2 calibration pre- and post-PECAN critical
 - Real-time retrievals / quicklooks provided by each PI using statistical retrieval methods
 - Will confirm calibration with clear sky MonoRTM comparisons
 - Post-PECAN: Apply MWRoe retrieval to all MWRs (like AERloe)
- Radiosonde profiles will be critical for clear sky calib tests

Uncertainty Characterization of Thermodynamic Profiles (2)

- 2 Raman lidars (FP-1 and FP-2), and 1 DIAL (FP-3)
 - ARM RLID calibrated with MWR-derived PWV
 - How will GSFC RLID be calibrated ?
 - Standard error propagation techniques used to get uncertainty estimate profiles
- Intercomparisons
 - Perform intercomparisons of all T/q measurements made at each PISA site (site-centric comparison)
 - Consistent at all FPs are Vaisala RS92 sondes and AERIs; these will serve as “transfer standard” among different FPs
 - Media day (30 May) will provide opportunity to compare remote sensors on MP-1, -2, -3 with the FP-3 sensors (AERI, DIAL)
 - Opportunities to take the MPs to the other FPs during experiment for cross-comparison?
 - LASE will be able to help cross-compare data from different MPs/FPs