

***Validation of level1b/1c LEO instruments in synergy with LEO/GEO companion instruments or in stand alone mode: Application to AIRS/Aqua, IIR/Calipso, IASI/Metop***

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High spectral resolution instruments as AIRS/Aqua or IASI and companion instruments on board Metop or other instruments of the A-Train (IIR/Calipso) etc. support the scientific community data requirements for weather forecasting and climate research. Such researches require quality data, well controlled (identification of systematic biases or spurious trends or variability). As an heritage of similar process for long term satellite data analysis (TOVS data of the NOAA/NASA Pathfinder programme, a five year-period of AIRS/Aqua data or, more recently IIR /Calipso) LMD is developing control of IASI channels primarily relevant to its own retrievals of level2 products: GHG (CO<sub>2</sub>, CO, CH<sub>4</sub>, ...), clouds, aerosols and surface characteristics. This is obtained through the coupling of a validated and stable forward model (the LMD 4A model) with collocated ancillary or auxiliary data or instruments (LEO or GEO, radiosondes, analyses). The detection of bias, trends etc. from cloud free day/night land/sea spectra is performed globally or over selected areas. Validation approach – including the validation of the forward model itself - and results will be discussed. Relevance of such an approach to the GSICS (Global Space-Based Inter-Calibration System) mission and goals will also be discussed.

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