IASI on Metop:
On Ground Calibration of the FM2 Instrument

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The Infrared Atmospheric Sounding Interferometer (IASI) is a key payload element of the METOP series of European meteorological polar-orbit satellites. It is developed jointly by CNES and EUMETSAT. It has been designed for operational meteorological soundings with a very high level of accuracy (Specifications on Temperature accuracy : 1K for 1 km and 10 % for humidity) and also for estimating and monitoring trace gases on a global scale. The IASI system includes the 3 instruments, a data processing software integrated in the EPS ground segment and a technical expertise centre (TEC) implemented in CNES Toulouse.

The measurement technique is based on passive IR remote sensing using an accurately calibrated Fourier Transform Spectrometer operating in the 3.7 – 15.5 µm spectral range and an associated infrared imager operating in the 10.3-12.5 µm spectral range. The optical configuration of the sounder is based on a Michelson interferometer. Interferograms are processed by the on-board digital processing subsystem which performs the inverse Fourier Transform and the radiometric calibration. The integrated infrared imager allows the co registration of the IASI sounder with AVHRR imager on-board METOP.

The second model (FM2) will be the first IASI instrument in-flight (April 2006). It has successfully completed a verification program conducted at ALCATEL SPACE premises in Cannes. This paper provides the key performance results obtained during this test campaign.