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Measuring Skin Temperatures with the IASI Hyperspectral Mission

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Although the role of satellites in observing the variability and change of the Earth system has increased in recent decades, remotely-sensed observations are still under-exploited to accurately assess climate change fingerprints. The IASI - Flux and Temperature (IASI-FT) project aims at providing new benchmarks for temperature observations using the calibrated radiances measured twice a day at any location by the IASI thermal infrared instrument on the suite of MetOp satellites (2006-2025).
The main challenge is to achieve the stringent accuracy and stability necessary for climate studies, particularly for climate trends. Time series for land and sea skin surface temperatures are derived and compared with in situ measurements and atmospheric reanalyses. The observed trends are analyzed at seasonal and regional scales in order to disentangle natural (weather/dynamical) variability and human-induced climate forcings.