



CO and O₃ retrievals from MTG IRS missions

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Monitoring the air quality from the local to the global scale has become one of the major priorities of the atmospheric science community in the recent years. Spaceborne sounders measuring the terrestrial infrared emission on low orbiting satellites (MOPITT, AIRS, TES) are already offering the possibility to provide the global abundances of various chemical species. Nevertheless, their spatial coverage and temporal resolution are not optimal to study the evolution of local pollution, fast photochemical reactions and fast transport processes. Instruments based on a geostationary satellite would greatly enhance both the spatial coverage and the temporal resolution and provide unprecedented data to improve the monitoring of pollution and the understanding of the tropospheric chemistry and dynamics. EUMETSAT is planning to launch its geostationary MTG (Meteosat Third Generation) satellites from 2015 with a high level priority put on the measurement of pollution.

This study investigates the capabilities offered by an Infrared sounder (IRS) onboard the MTG platform to retrieve the tropospheric CO and O₃ content. It relies on a thorough characterization of the retrievals for different instrumental characteristics (NESR and spectral resolution) taking into account the impact of uncertainties about the surface properties (temperature, albedo) and about the state of the atmosphere (air temperature, presence and type of aerosols).