



Atmospheric chemistry activities in preparation of future ESA space missions

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Following the recommendations of the IGOS theme on atmospheric chemistry, the “Integrated Global Atmospheric Chemistry Observations” (IGACO), the space component of a future observing system should include a limb-sounding part to measure the upper troposphere and the stratosphere (stratosphere-troposphere exchange, climate-chemistry coupling, stratospheric ozone) and a nadir-viewing part observing the troposphere with high temporal and spatial resolution (pollution, climate, oxidising power of the atmosphere).

Consistent with these requirements, ESA is conducting several preparatory study activities. A future Earth Watch mission for operational atmospheric chemistry monitoring could be implemented in the framework of the GMES initiative in cooperation with the European Commission or in the frame of the next generation of Eumetsat’s meteorological satellites. A study to define the detailed observational requirements and to elaborate mission concepts is underway.

Advanced study activities are taking place for UTLS limb-sounding concepts. An airborne mm-wave limb sounder demonstrator has been developed by the Agency and will start test flights soon. Tomographic, two-dimensional retrieval algorithms have been developed through ESA-funded studies.