Presentation of the JEM/SMILES level 2 research products

Philippe Baron (1), Yasuko Kasai (1), Joachim Urban (2), Donal Murtagh (2), Joakim Moller (2), Jana Mendrok (1), and Yasuhiro Murayama (1)

(1) National Institute of Information and Communications Technology (NICT), Environmental Sensing and Network Group, Applied Electromagnetic Research Center, Koganei, Tokyo, Japan (baron@nict.go.jp), (2) Chalmers University of Technology, Goteborg, Sweden

The super-conductive Sub-Millimeter Limb Emission Sounder (SMILES) is a high sensitive radiometer to study atmospheric dynamics and chemistry with a strong emphasis on the stratosphere. It is the result of the collaboration between the Japanese Aerospace eXploration Agency (JAXA)and the National Institute of Technology and Communications (NICT, Japan). It is operating from the Japanese Experiment Module (JEM) onboard the International Space Station. Observations started on october, 2010. The latitude coverage is typically from -40$\{circ$ to 60$\{circ$. The main products are stratospheric O_3 and its isotopes, $H^{35}Cl$, $H^{37}Cl$, ClO, BrO, HO_2, HOCl, H_2O_2, CH_3CN. Thanks to its very low signal to noise ratio, SMILES is very well suited to observe radicals with very low abundance such as BrO and HO_2. Futhermore due to the ISS orbit precession, it is possible to follow their diurnal variation at given latitudes.

A system for an operational processing of the observations has been developed by JAXA and, a system for research on retrieval algorithms has been developed by NICT. In this presentation, the current NICT research products (version 1.0) will be described as well as the ongoing research including plans for new products.