

The JEM/SMILES limb sounder: Presentation of the NICT research data processing chain.

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The Superconducting submillimeter-Wave Limb emission Sounder (SMILES) will operate from the International space station, to perform high accuracy observations of minor/trace constituents from the upper troposphere to the mesosphere. It will be launched in summer 2009. The research products will be produced by the National Institute of Information and Communications Technology (NICT). The NICT research will aim to validate and improve the official geophysical data produced by the Japan Aerospace Exploration Agency (JAXA). Compared to the robust processing chain developed by JAXA, we aim to develop a more flexible tool in order to facilitate the evolution of algorithms according to the observed performances of the instrument in operation. The NICT research products will also consist in additional data that required specific processing not implemented in the JAXA chain in order to retrieve parameters in upper-Troposphere/Lower-stratosphere (e.g. ice water content, humidity, and in the mesosphere (HO₂, H₂O₂, Wind). Retrieval of molecules with extremely low signal to noise ratio will also be tested on the research chain (e.g. SO₂, HOBr).

In this presentation, we will describe the targets of the research processing chain as well as an estimation of the expected performances. We will discuss the status of the chain implementation and the status of the retrieval algorithm.