Room: 101

JEM/SMILES Observation Capability

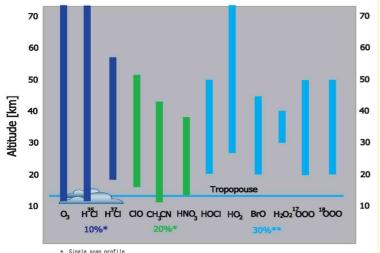
YASUKO KASAI[1]; Philippe Baron[1]; Jana Mendrok[1]; Satoshi Ochiai[1]; Takuki Sano[2]; Toshiyuki Nishibori[2]; Kenichi Kikuchi[2]; Mission Team JEM/SMILES[3]

[1] NICT; [2] JAXA; [3] -

http://www2.nict.go.jp/y/y222/THz/

A new generation of sub-millimeter-wave receivers employing sensitive SIS (Superconductor-Insulator- Superconductor) detector technology will provide new opportunities for precise remote sensing measurements of minor constituents in atmosphere.

Superconductive Submillimeter-Wave Limb-Emission Sounder (SMILES) was designed to be onbord the Japanese Experiment Module (JEM) on the International Space Station (ISS) as a collaboration project of Japan Aerospace Exploration Agency (JAXA) and National Institute of Information and Communications Technology (NICT). SMILES scheduled to launch in September 2009 by the H-II Transfer Vehicle (HTV). Mission Objectives are: i) Space demonstration of superconductive mixer and 4-K mechanical cooler for the submillimeter limbemission sounding, and ii) global observations of atmospheric minor constituents. JEM/SMILES will allow to observe the atmospheric species such as O3, H35Cl, H37Cl, ClO, BrO, HOCl, HO2, and HNO3, CH3CN, and Ozone isotope species with the precisions in a few to several tens percents from upper troposphere to the mesosphere. We have estimated the observation capabilities of JEM/SMILES. This new technology may allow us to shade new light the open issue in atmospheric science.



 ^{*} Single scan profile
** Averaged profiles (for example, zonal mean average/ 5km altitude resolution)