

## Remote sensing of the ionosphere, mesosphere, thermosphere and plasmasphere from space and ground

# Akinori Saito[1]; IMAP working group[2]

[1] Dept. of Geophysics, Kyoto Univ.; [2] -

<http://www-step.kugi.kyoto-u.ac.jp/IMAP/>

Remote sensing project for the ionosphere, mesosphere, thermosphere and plasmasphere has been discussed in the Mesosphere-Thermosphere-Ionosphere branch of SGEPS. Though both of the space-borne and ground-based measurements have been planned, space-borne project has been intensively discussed including the long-range vision. The space-borne remote sensing of the Earth's upper atmosphere enables to observe with wide field-of-view that cannot be achieved by the ground-based technique, and detect FUV and EUV that cannot be detected from the ground. It is expected to make a break-through in this field. To conduct the space-borne observation, ISS-Ionosphere-Mesosphere-upper Atmosphere, Plasmasphere mapping (ISS-IMAP) mission was proposed as a port-sharing mission of Exposed Facility of Japanese Experiment Module on the International Space Station (EF of ISS-JEM), and selected as one of candidate missions. It is scheduled to be installed on ISS in 2011. A small satellite, IMAP-satellite, is also planned to make global imaging of the Earth's upper atmosphere. These space-borne remote sensing missions are expected to play a role of the meteorological satellites in the low Earth orbit and the geosynchronous orbit for the meteorology. The combination among the ground-based remote sensing, numerical model, and space-borne remote sensing is necessary to reveal the total feature of the upper atmospheric phenomena, and to predict its variations. In the presentation, the remote sensing plan of the Earth's upper atmosphere by Japanese community will be introduced.