

International Session (Oral) | Symbol P (Space and Planetary Sciences) | P-EM Solar-Terrestrial Sciences, Space Electromagnetism & Space Environment

[P-EM06_30PM2]Study of coupling processes in Sun-Earth system with large radars and large-area observations

Convener:*Mamoru Yamamoto(Research Institute for Sustainable Humanosphere, Kyoto University), Yasunobu Ogawa(National Institute of Polar Research), Satonori Nozawa(Solar-Terrestrial Environment Laboratory), Hiroyuki Hashiguchi(Research Institute for Sustainable Humanosphere, Kyoto University), Chair:Hiroyuki Hashiguchi(Research Institute for Sustainable Humanosphere, Kyoto University)

Wed. Apr 30, 2014 4:15 PM - 6:00 PM 312 (3F)

The Earth accepts huge input of energy and material from the Sun. The Earth's environment is maintained by the balance between their inputs and outputs. It is important to study energy and material transport of the Earth. This is an international session that discusses studies of the coupling processes in the Sun-Earth system based on the projects of large radars and large-area observation network. The facilities and networks included are the Equatorial MU Radar (EMU) in Indonesia to study the whole equatorial atmosphere, the EISCAT_3D radar system to study detailed structures and elementary processes of the magnetosphere-ionosphere in the polar region, and global observation networks of magnetometers and radio and optical instruments to study the coupling processes with the global scale. We will show outline of the project and discuss sciences by soliciting variety papers. This session is open to the world, and we strongly encourage submission of papers related to other facilities and projects, i.e., atmospheric or incoherent-scatter radars, observation networks, satellites, and simulation or theoretical studies, etc.

5:15 PM - 5:30 PM

△[PEM06-P08_PG]Observation of non-thermal planetary radio emissions with EISCAT 3D

3-min talk in an oral session

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EISCAT 3D is developing as incoherent scatter radar to study the terrestrial ionosphere and atmosphere. Due to large aperture area and low noise temperature of the receiving system of EISCAT 3D and the uniqueness of the receiving frequency of 233 MHz, it can also be a useful tool to study non-thermal radio emissions from the solar system planets. In this paper, feasibility and advantage of EISCAT 3D for observing non-thermal planetary radio emissions are presented. Following topics will be discussed. (1) Time variability of Jovian synchrotron radiation, (2) Radio emissions from lightning discharges occurred in the atmospheres of Mars and Saturn, and (3) Recent trials to detect incoherent radio emissions from extra-solar planets.