
[EE] Evening Poster | P (Space and Planetary Sciences) | P-EM Solar-Terrestrial Sciences, Space Electromagnetism & Space Environment

[P-EM13] Study of coupling processes in solar-terrestrial system

convener: Mamoru Yamamoto (Research Institute for Sustainable Humanosphere, Kyoto University), Yasunobu Ogawa (National Institute of Polar Research), Satonori Nozawa (名古屋大学宇宙地球環境研究所, 共同), Akimasa Yoshikawa (Department of Earth and Planetary Sciences, Kyushu University)

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The Earth accepts vast 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 project "Study of coupling processes in solar-terrestrial system" that was approved by the Master Plan 2017 of Science Council of Japan. The facilities and networks included are the Equatorial MU Radar (EMU) in Indonesia to study the whole equatorial atmosphere, the EISCAT_3D radar in northern Scandinavia to study detailed structures and elementary processes of the magnetosphere-ionosphere coupling in the polar region, and global networks of various ground-based instruments and observation data. We will show current status 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.

[PEM13-P09] Recent advances on dayside diffuse aurora and throat aurora

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Svalbard Island located in north of Europe is one of a few points where can make longtime optical auroral observation at the cusp latitude on the dayside during the boreal winter season on Earth. Chinese Yellow River Station (YRS) is situated at Ny-Alesund in Svalbard. Since November 2003, an optical observation system consisting of three identical all-sky imagers supplied with the narrow band filters centered at 427.8 nm, 557.5 nm and 630.0 nm, has been continuously operated at YRS up to now. Based on these observations, we have obtained new results on two aspects. One is about dayside diffuse aurora and another is about a newly defined auroral form, called "throat aurora". These new results have shed new light on many topics, such as how the cold plasmas in the dayside outer magnetosphere are distributed, generated, and interacting with the magnetopause, and how the transient processes generated in the magnetosheath can affect the solar wind-magnetosphere coupling. Some new advances on these topics will be presented.