

[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)

Sun. May 20, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

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-P08] Recent activities of MAGDAS project

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International Center for Space Weather Science and Education (ICSWSE), Kyushu University is the research institute for the purpose of conducting research and education in space weather and related fields. Our magnetometer array is well known as the "MAGDAS/CPMN (MAGnetic Data Acquisition System/Circum-pan Pacific Magnetometer Network)" (Principal Investigator: Dr. A. Yoshikawa). Currently, over 70 magnetometers and 3 FM-CW (Frequency Modulated Continuous Wave) radars have been installed all over the world. One of our recent research topics is Equatorial Electrojet (EEJ). To accelerate the understanding of EEJ structure, we constructed dense magnetometer array near magnetic equator at Peru and Malaysia. MAGDAS instruments send observational data to ICSWSE in near real-time via the Internet. Our Ph. D. student developed new EEJ model by using Peruvian array, and it will be published as his Ph.D. thesis. We also calculate EE-index (Uozumi et al, 2008) for space weather nowcast/forecast using magnetometer data along the magnetic equator, and publish every hour on the website. We also plan to install new FM-CW radar at Sicaya, Peru. In addition, we also use MAGDAS for capacity building of host institutes. We teach how to use the instrument, data, and scientific applications based on geomagnetism. In this fiscal year, we held the National School on Space Weather and Electromagnetism (NSoSEE), in August 2017 at UiTM Pasir Gudang, Malaysia. Following the success of the above school, we plan to hold Japan-Malaysia Joint Seminar on Space Weather and Electromagnetism and Intensive Course on Space Magnetohydrodynamics (JMJSEE), in March 2018, at Kyushu University, Japan. It is important that any user can easily get detailed information and data related to MAGDAS. For the information of MAGDAS, we provide various MAGDAS information via our website. In addition, we provide the MAGDAS information via optimized metadata database system by IUGONET (Inter-university Upper Atmosphere Observation NETWORK) Type-A. Users can download and analysis verified MAGDAS data using our website, SPEDAS (Space Physics Environment Data Analysis System), ERG-SC (<https://ergsc.isee.nagoya-u.ac.jp/>), SuperMAG (<http://supermag.jhuapl.edu/>), and so on.

We believe researchers use MAGDAS data on proper rule and develop their science. In this paper, we will introduce about scientific, educational and data activities of MAGDAS project.