

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

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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-P04\_PG]Statistical study of ionospheric irregularities by using Equatorial Atmosphere Radar

3-min talk in an oral session

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Keywords:Ionospheric Irregularity, Equatorial Atmosphere Radar, Statistical Study

The equatorial region is the source of many unique atmospheric processes that couple the entire atmosphere vertically from bottom to top and horizontally from equator to pole. The dynamical, electrodynamical, and electrical process of lower and upper atmosphere of equatorial region contribute to ionospheric irregularities through propagation of atmospheric waves, and magnetosphere-ionosphere interaction. Those process are responsible for the large degree of variabilities observed in the low latitude ionosphere. Study of ionospheric irregularities was made during 2008-2013 by using 47 MHz Equatorial Atmosphere Radar (EAR) in Kototabang, Indonesia (0.20S, 100.32E; 10.36S dip latitude). Characteristic of echoes from ionospheric Field Aligned Irregularities (FAI) classified based on structure of E and F backscattered echoes power of EAR radar both of spatially and temporally. The results base on intermittent observations (2008-2010) and continuous observations (2011-2013). During the observations were obtained percentage of Equatorial Spread F (ESF) occurrences, diurnal and seasonal characteristics of ionospheric irregularities from the E region and also from F region. Furthermore, occurrence correlation between E and F region irregularities are also observed.