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

[P-EM15]Dynamics in magnetosphere and ionosphere

convener:Yoshimasa Tanaka(National Institute of Polar Research), Tomoaki Hori(Institute for Space-Earth Environmental Research, Nagoya University), Aoi Nakamizo(情報通信研究機構　電磁波研究所, 共同), Mitsunori Ozaki(Faculty of Electrical and Computer Engineering, Institute of Science and Engineering, Kanazawa University)

Mon. May 21, 2018 5:15 PM - 6:30 PM Poster Hall (International Exhibition Hall7, Makuhari Messe)

This session provides an opportunity to present recent results from satellite and ground-based observations and theoretical and simulation studies on the magnetosphere, ionosphere, and their coupling system. We invite contributions dealing with various phenomena related to the magnetosphere-ionosphere system: solar wind-magnetosphere interaction, magnetosphere-ionosphere convection, field-aligned current, magnetic storms/substorms, neutral-plasma interaction, ionospheric ion inflow and outflow, aurora phenomena, and so forth. Discussions on planetary and satellite ionosphere and magnetospheres, future missions and instrument developments are also welcome.

[PEM15-P09]Nightside Ultra-Low-Frequency waves observed in the topside ionosphere by the DEMETER satellite

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Keywords:topside ionosphere, ultra-low-frequency oscillations, electron density perturbations

We study Ultra-Low-Frequency waves (ULF) at frequencies 17-100 mHz observed in the topside ionosphere by the DEMETER satellite in a ~5-year period from January 2006 to November 2010. Our results show that two types of ULF oscillations occur on the nightside in the L<2 region. These two kinds of ULF oscillations are separated based on cross-covariance analysis between electric field in the DC/ULF range and electron density. Type I ULF oscillations, accompanied by electron density perturbations (average |δNe/Ne_0|>5%), are found to lag behind density variations; and the longitudinal distribution of type I ULF oscillations is quite similar to the distribution of plasma irregularities at solar minimum. These signatures suggest that type I ULF oscillations are related to plasma irregularities that are common phenomena in the nightside F region ionosphere. The characteristics of type II ULF oscillations (without significant electron density perturbations) agree well with those features of mid-latitude ionospheric electric field fluctuations, which are not thought to be related to magnetospheric origins.