[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-P06]Plasma flow enhancements preceding a large-scale moving cusp aurora

*Yunosuke Nagafusa[1], Satoshi Taguchi[1], Yasunobu Ogawa[2], Keisuke Hosokawa[3] (1.Graduate School of Science, Kyoto University, 2.National Institute of Polar Research, 3.Department of Communication Engineering and Informatics, University of Electro-Communications)

Keywords:Plasma flow, cusp, aurora, polar cap

Plasma flow associated with a small-scale poleward moving cusp aurora shows a twin vortex pattern. For a large-scale moving cusp aurora, whose longitudinal width is 2 - 3 hours MLT, however, plasma flow features surrounding the aurora are still unclear. In this study, we present the result from simultaneous observations of the EISCAT Svalbard Radar (ESR) with 32-m steerable and 42-m field-aligned fixed antennas, and a nearby all-sky imager for a large-scale moving cusp aurora event obtained on 8 December, 2013. The result shows that plasma flow enhancements precede the large-scale moving cusp aurora. In other words, the large-scale moving cusp aurora is not created at the forefront of the enhanced plasma flow region. The result also indicates that the forward boundary of the enhanced plasma flow is located nearly perpendicular to the poleward boundary of the moving cusp aurora. We discuss a plausible mechanism of the formation of this boundary.