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

[P-EM16]Dynamics of Earth's Inner Magnetosphere and Initial Results from Arase

convener:Danny Summers(Memorial University of Newfoundland), Yoshizumi Miyoshi(Institute for Space-Earth Environmental Research, Nagoya University), Keisuke Hosokawa(電気通信大学大学院情報理工学研究科, 共同), Yusuke Ebihara(Research Institute for Sustainable Humanosphere, Kyoto University)
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Earth's inner magnetosphere is a fascinating source of space research problems. There remain many fundamental questions concerning the physics of the radiation belts, the ring current, the plasmasphere and the ionosphere. The JAXA spacecraft Arase(ERG) was successfully launched in December 2016, and has since been providing excellent data on waves, particles and fields over a range of L-shells in the inner magnetosphere. This session particularly welcome submissions related to the Arase mission. As well, data from other recent missions to the magnetosphere are also welcome, including the Van Allen Probes, MMS, and THEMIS. Topics of interest include charged particle interactions with the predominant electromagnetic wave modes such as whistler-mode chorus and hiss, ion cyclotron waves, magnetosonic waves, and ULF waves. Projects involving the prevailing issues of particle acceleration and loss, and particle transport are also of interest. In addition, projects involving the coupling of plasma populations in the inner magnetosphere are also timely. Studies involving observations, simulations, theory and modeling are all invited.

[PEM16-P18]Energetic electrons observed in the plasma sheet near the outer radiation belt

*Iku Shinohara[1], Tsugunobu Nagai[8], Takefumi Mitani[1], Satoshi Kasahara[2], Yoichi Kazama[3], Shiang-Yu Wang[3], Sunny W. Y. Tam[4], Nana Higashio[5], Ayako Matsuoka[1], Kazushi Asamura[1], Shoichiro Yokota[6], Takeshi Takashima[1], Yoshizumi Miyoshi[7] (1.Japan Aerospace Exploration Agency/Institute of Space and Astronautical Science, 2.University of Tokyo / Graduate School of Science, 3.Academia Sinica/Institute of Astronomy and Astrophysics, 4. National Cheng Kung University, 5.Japan Aerospace Exploration Agency/Research and Development Directorate, 6.Osaka University / Graduate School of Science, 7.Nagoya Univerisity/Institute for Space-Earth Environment Research, 8.Tokyo Institute of Technology / Graduate School of Science and Engineering)
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Energetic electron bursts observed in the plasma sheet near the outside edge of the outer radiation belt are surveyed by using the data obtained by Arase (ERG) during the last summer from May to July, 2017, when the apogee local time was located around the midnight. The orbital inclination of Arase is about 31 degrees, so that Arase can observe higher latitude plasma sheet near the plasma sheet boundary, and, as expected, Arase observed the plasma sheet just outside of the outer radiation belt. In these observations, we found that energetic electron bursts up to 500 keV frequently appear at higher L-value plasma sheet. There were 36 electron burst events during the interval. Possible sources of these energetic electron bursts of a few hundreds keV in the region are (1) directly accelerated from magnetotail reconnection sites and (2) dispersion-less injections. It is interesting to distinguish the acceleration source of them and address each contribution of the energy input to the radiation belt for understanding the relation between magnetotail reconnection and the acceleration of MeV electrons in the radiation belts. These electron bursts do not show beam like velocity distributions, and, in some

events, bursts are associated with the injection like magnetic field fluctuation. We will discuss these characteristics of the observed energetic electron bursts by using the wide-range electron distribution measurements.