R006-40
A 会場 ：9/27　PM1 （13:45-15:30）
13:45〜14:00

#田　采祐 [1)], 三好　由純 [1)], 中村　紗都子 [1)], 小路　真史 [1)], 堀　智昭 [1)],Bortnik Jacob[2)],Lyons Larry[2)], 三谷　烈史 [3)],Takashima Takeshi[3)], 篠原　育 [3)], 松岡　彩子 [4)],Higashio N.[3)]
([1] 名大 ISEE,[2]UCLA,[3] 宇宙研,[4] 京都大学

Influence of nonlinear EMIC waves on relativistic electrons in the outer radiation belt using the in-situ observations

#ChaeWoo Jun[1)],Yoshizumi Miyoshi[1)],Satoko Nakamura[1)],Masafumi Shoji[1)],Tomoaki Hori[1)],Jacob Bortnik[2)],Larry Lyons[2)],Takefumi Mitani[3)],Takeshi Takashima[3)],Iku Shinohara[3)],Ayako Matsuoka[4)],N. Higashio[3)]
([1]Institute for Space-Earth Environement Research, Nagoya University,[2]Atmospheric and Oceanic Sciences, University of California Los Angeles, Los Angeles, USA,[3]Japan Aerospace Exploration Agency, Institute of Space and Astronautical Science,[4]Graduate School of Science, Kyoto University

EMIC wave-particle interaction is believed to play a significant role in the dynamics of energetic particles in the magnetosphere. Particularly, nonlinear processes can cause rapid losses of relativistic electrons in the outer radiation belt. We recently found the triggering condition for nonlinear EMIC waves by the distortion of the dayside magnetic field in response to the intensification of the solar wind dynamic pressure. In other words, the increase in the solar wind dynamic pressure is the preferred condition for nonlinear EMIC triggering emissions. In this study, we investigate the variations of relativistic electron distributions between structureless EMIC waves and nonlinear EMIC rising-tone emission events due to dayside magnetospheric compression by the solar wind dynamic pressure using the Van Allen Probes and Arase satellites. In the preliminary result, the residual flux variations on MeV electrons and EMIC waves are observed simultaneously, and we find a clear phase space density depression of relativistic electrons in timing when EMIC waves are observed. The residual fluxes of 0.5-5 MeV electrons exhibit a similar repletion period of a few minutes with the observed EMIC rising-tone emissions, supposing that these fluctuations might be related to rapid loss of relativistic electrons due to nonlinear process. We discuss the underlying physical dynamics causing losses of relativistic electrons in the outer radiation belt by EMIC wave-particle interactions.