Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

PCG10-10 Room:102A Time:May 24 11:50-12:05

Development of a Low-Energy Electron Instrument LEP-e for the ERG Mission

Yoichi Kazama[1*], Chio Z. Cheng[1], Kazushi Asamura[2]

[1]PSSC/NCKU, Taiwan, [2]ISAS/JAXA, Japan

Plasma and Space Science Center (PSSC) at National Cheng Kung University (NCKU) in Taiwan is now developing a low-energy electron instrument LEP-e for JAXA's radiation belts observation mission ERG (Energization and Radiation in Geospace). The LEP-e instrument measures electrons in the inner magnetosphere with energies from ~10eV to ~20keV to give key information on background plasmas, in which electron accelerations to a MeV range take place. The instrument is a tophat-type electostatic analyzer with multi-channel plates, similar to those on the NOZOMI and REIMEI missions. In the ERG mission, the keypoint of plasma instruments is to suppress effects due to background radiations. LEP-e employs 6mm-thick aluminum shields for the analyzer, and 5mm-thick shields for the electronics. In addition, LEP-e has a background noise channel, and an electron count is estimated by subtracting a noise count. In the presentation, instrument performance, estimated radiation effects and the current status of the development will be discussed.

Keywords: plasma analyzer, ERG mission