

## Low-energy particle experiments - electron analyzer (LEPe) for the Arase mission

# Yoichi Kazama[1]; B.-J. Wang[2]; S.-Y. Wang[3]; Tzu-Fang Chang[4]; Chih-Yu Chiang[5]; Sunny W. Y. Tam[5]; Kazushi Asamura[6]  
[1] ASIAA; [2] ASIAA, Taiwan; [3] ASIAA, Taiwan; [4] ISEE, Nagoya Univ.; [5] ISAPS, NCKU, Taiwan; [6] ISAS/JAXA

Academia Sinica Institute of Astronomy and Astrophysics (ASIAA) and Institute of Space and Plasma Sciences (ISAPS) at National Cheng Kung University in Taiwan developed a low-energy electron instrument (LEPe) for the Exploration of Energization and Radiation in Geospace (ERG) mission, in collaboration with Institute of Space and Astronautical Science (ISAS), Japan. The LEPe instrument employs a toroidal tophat-type electrostatic analyzer with multi-channel plates, and measures electrons with energies of ~20 eV to 19 keV. The analyzer was designed toward relatively large sensitivity for statistically better signals. Against background radiations, the analyzer has 6mm thick aluminum shields and one background anode for reduction and subtraction of radiation signals. The instrument measures three dimensional electron fluxes in approximately 8 seconds of one spin, with angular resolutions of 22.5 degrees. For the purpose of resolving loss cones, specific 45 degrees are divided into 12 channels, 3.75 degrees for each. The ERG spacecraft was successfully launched late in 2016, and science operations phase has started since late March, 2017. The LEPe instrument is functioning well and is measuring low-energy electrons that dominate in the inner magnetosphere and also control wave activities. In this presentation, we will explain the LEPe instrument onboard the ERG spacecraft and will introduce initial results of the measurements.