

## Preflight performance and expected data products of “High energy Electron exPeriment (HEP)” onboard the ERG satellite

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The Exploration of energization and Radiation in Geospace (ERG) project will explore how relativistic electrons in the radiation belts are generated during space storms. “High energy Electron exPeriment (HEP)” on board ERG satellite will observe 70 keV -2 MeV electrons, which covers energy range of electrons to be accelerated and accelerated electrons, and play an important role to understand electron acceleration.

HEP provide three-dimensional velocity distribution of electrons every spacecraft spin period. Electrons are observed by two types of camera designs, HEP-L and HEP-H, with regard to geometrical factor and energy range. HEP-L observes 0.1 - 1 MeV electrons and its geometrical factor is  $\sim 10^{-3}$  cm<sup>2</sup> str, and HEP-H observes 0.7 - 2 MeV and g-factor is  $\sim 10^{-2}$  cm<sup>2</sup> str. HEP-L and HEP-H each consist of three pin-hole type cameras, and each camera consist of mechanical collimator, stacked silicon semiconductor detectors and readout ASICs. HEP-H has larger opening angle of the collimator and more silicon detectors to observe higher energy electrons than HEP-L.

In this presentation we introduce the HEP instrument and report the results of performance tests of the flight model. We also describe data products from HEP observation in orbit.