

A Small-Satellite Mission to Investigate the Dynamics of the Inner Magnetosphere

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The Earth's inner magnetosphere (inside 10 Re) is known to be the cavity where the energetic particles, so-called radiation belt particles, are generated and trapped. Knowledge of this region is very important as a measurable laboratory of high-energy particle acceleration in space as well as for human activities in space including space weather prediction. Despite abundant in-situ satellite measurements, this region has remained to be a missing region because of several difficulties arising from satellite measurements, such as high-energy particle contamination to low-energy particle measurement, protection of possible incidence of radiation belt particles, and measurement of 3-dimensional particle distribution functions over a broad energy range from a few eV to more than 100 keV. In this presentation, we would like to address important scientific topics and possible configuration of the two small satellites that are expected to bring us new insight on the physics of the inner magnetosphere.