

Study of Space Storms using Next Generation Small Satellite of Korea Study of Space Storms using Next Generation Small Satellite of Korea

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Korea Advanced Institute of Science and Technology (KAIST) is developing its 8th satellite as the first of the Next Generation Small Satellite series. The satellite will be launched in early 2016 into a polar orbit with an altitude of ~700 km. While the main mission of the satellite is to test engineering payloads, scientific instruments were also selected for space science and astrophysical investigations. The scientific goal of the space science payloads is to understand the behavior of the radiation belt and the ionosphere during space storms. Two of the space science payloads, Medium Energy Particle Detector (MEPD) and High Energy Particle Detector (HEPD), will be operated in the polar region to observe precipitating and trapped energetic particles, in the energy range from ~40 keV to ~1 MeV. Electrostatic deflectors will be employed in these instruments to reduce the cross-contamination between electrons and protons. A Langmuir Probe (LP), a Retarding Potential Analyzer (RPA), and an Ion Drift Meter (IDM) will also be on board the satellite for the operation in the mid- and low-latitude regions by sharing the orbits with the infrared astrophysics mission. Instruments and their operation scenarios will be discussed.

キーワード: Space Storms, Next Generation Small Satellite

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