

MeV protons in the inner belt and slot region observed by HEP onboard the Arase satellite

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The Arase satellite was launched on December 20, 2016 for studying the radiation belt dynamics. The Arase is equipped with HEP (High Energy Electron Experiment) to observe high energy electrons. HEP is designed to measure electrons at an energy of 70 keV to 2 MeV. HEP detected significant counts in the MeV energy range, though the Van Allen Probes have observed less MeV electrons in the inner belt. We consider that this is due to contamination of high energy protons. In this study, we aim to clarify the energy of protons observed in HEP. We performed Geant4 model calculation of HEP for incidence of energetic protons. The results show that protons of 1-2 MeV, > 6MeV, and > 60 MeV can be observed by HEP. We will report dynamics of MeV protons from HEP observations.

References

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