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Study of the performance of the HEPD apparatus for the CSES mission

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The High-Energy Particle Detector (HEPD) is one of the payloads of the CSES space mission. The CSES (China Seismo-Electromagnetic Satellite) mission will investigate the structure and the dynamic of the topside ionosphere, will monitor electric and magnetic field and high energy particle fluctuations, searching for their correlations with the geophysical activity, in order to contribute to the monitoring of earthquakes from space. The HEPD is built by the Italian collaboration and has different goals. It will study the temporal stability of the inner Van Allen radiation belts, the precipitation of trapped particles in the atmosphere and the low energy component of the cosmic rays (5 - 100 MeV for electrons and 15 - 300 MeV for protons). Here is presented a study of the performance of the apparatus to separate electrons and protons and identify nuclei up to iron.

Primary author: Dr PANICO, Beatrice (NA)

Co-authors: Mr SOTGIU, Alessandro (Università di Roma Tor Vergata); Dr AMBROGLINI, Filippo (PG); Dr PALMA, Francesco (ROMA2)

Presenter: Dr PANICO, Beatrice (NA)

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