

## The High Energy Particle Detector (HEPD-02) onboard the CSES-02 Satellite.

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The High Energy Particle Detector (HEPD-02) is one of the scientific payloads onboard the second China Seismo-Electromagnetic Satellite (CSES-02), one of a series of Chinese-Italian space missions dedicated to monitoring of the near-Earth environment and to study the lithosphere-atmosphere-ionosphere coupling mechanisms.

The launch of CSES-02 is foreseen in the first half of 2024.

HEPD-02 is designed to measure particle flux and precipitation from the inner radiation belts induced by solar, terrestrial or anthropic phenomena in a wide range of energies, from 3 to 100 MeV for electrons and from 30 to 200 MeV/n for protons and light nuclei. It is composed of a high precision tracking system made of monolithic active pixel sensors (MAPS), two layers of crossed plastic scintillator bars as a trigger system and a calorimeter combining a tower of plastic scintillators and two layers of LYSO crystals. The whole is surrounded by a containment detector consisting of five plastic scintillator panels.

We present here the main characteristics of HEPD-02, with particular regard to its calorimeter, highlighting its performance to reach the expected energy range and resolution as well as its capability in electron and proton angular reconstruction.

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