



Contribution ID: 190

Type: Oral contribution

The High Energy Particle Detector on board the CSES China Seismo-Electromagnetic satellite

Wednesday, 5 August 2015 14:45 (15 minutes)

The CSES space mission will study the temporal stability of the inner Van Allen radiation belts, investigating precipitation of trapped particles induced by magnetospheric, ionospheric and tropospheric EM emissions, as well as by seismo-electromagnetic and anthropogenic disturbances.

CSES satellite will be launched in September 2016 and inserted into a circular Sun-synchronous orbit with 98 degrees inclination and 500 km altitude. Expected lifetime is 5 years. CSES hosts several instruments onboard: 2 magnetometers, an electrical field detector, a plasma analyzer, a Langmuir probe and a High Energy Particle Detector (HEPD). The HEPD detector consists of two layer plastic scintillators, one segmented, for the trigger and a calorimeter constituted by a tower of plastic scintillator counters and a LYSO plane. The direction of the incident particle is provided by two planes of double-side silicon microstrip detectors placed in front of the trigger.

HEPD detector will measure electrons (3 - 100 MeV) and protons (30 - 300 MeV) along CSES orbit. The angular and energy resolution and the detector acceptance are optimized to accurately detect the expected low short-term time variations of the particle flux from the radiation belts.

Topic of this talk is the technical description of the HEPD and its main characteristics.

Collaboration

– not specified –

Registration number following "ICRC2015-I/"

208

Primary author: SPARVOLI, Roberta (University of Rome Tor Vergata)

Co-author: THE CSES/HEPD, Collaboration (CSES/HEPD)

Presenter: SPARVOLI, Roberta (University of Rome Tor Vergata)

Session Classification: Parallel CR21 Future IN

Track Classification: CR-IN