



Contribution ID: 865

Type: Poster

Observations of space weather events using particle detectors onboard the CSES-01 satellite during Solar Cycles 24 and 25.

The China Seismo-Electromagnetic Satellite (CSES-01) is equipped with a suite of nine scientific instruments, including multiple payloads designed to detect charged particles over an energy range spanning from hundreds of keV to hundreds of MeV. Space weather events, such as high-energy particle fluxes ejected by the Sun during CMEs and magnetic field disturbances, can significantly perturb the magnetosphere, altering the intensity and spectral shape of particle fluxes observed in the near-Earth environment. In this study, we present a comprehensive analysis of space weather events observed by particle detectors onboard the CSES-01 satellite, employing a novel framework developed to automatically detect anomalous proton fluxes recorded by the High Energy Particle Package (HEPP-L). Selected cases of intense solar events will be discussed, when possible combining HEPP-L proton flux measurements (2–20 MeV) with data from the High-Energy Particle Detector (HEPD-01) or HEPP-H (up to 200 MeV), to observe the dynamic of the events over three orders of magnitude. The sensitivity of CSES-01's particle payloads to different classes of space weather events will be evaluated. This work highlights the capabilities of the CSES-01 mission in detecting and characterizing intense solar events, demonstrating its valuable contribution to space weather monitoring.

Collaboration(s)

on behalf of the CSES-Limadou collaboration

Author: FOLLEGA, Francesco Maria (Universita degli Studi di Trento and INFN (IT))

Presenter: FOLLEGA, Francesco Maria (Universita degli Studi di Trento and INFN (IT))

Session Classification: PO-1

Track Classification: Solar & Heliospheric Physics