

Titolo:

The CSES mission: a sophisticated multi-point space observatory.

Speaker:

F.M.Follega on behalf of the Limadou Collaboration

Abstract:

The China Seismo-Electromagnetic Satellite (CSES) program is a collaborative effort between the Italian Space Agency (ASI) and the China National Space Administration (CNSA). The scientific mission is dedicated to: the extension of Cosmic Ray measurements at low energy, the study of impulsive solar events and solar-terrestrial interactions, the monitoring of Van Allen belt dynamics and the investigation of particle and plasma perturbations caused by natural sources or anthropic emitters.

CSES-01 is the first satellite of the series and is designed to be a state-of-the-art multi-payload space observatory. It was launched in February 2018, and it is now on a Sun-synchronous orbit around the Earth at an altitude of about 500 km. It carries a suite of nine instruments among which there are several payloads optimized to measure particles in space. The combined sensitivity region for the particle detectors covers energies from 0.1 MeV for electrons with HEPP-L, to ~ 250 MeV for protons with HEPD-01 and HEPP-H.

The second satellite CSES-02 is still under development and its launch foreseen in the first half of 2024. It will carry updated versions of particle detectors (i.e. HEPD-02) studied to improve the scientific capabilities of the mission in a wide energy range. The addition of a second observation point will increase the spatial coverage of the mission and lead to a significant enhancement in the statistics gathered during the satellites operating time.

This contribution will present the aim and scientific potential of the CSES program. It will discuss the current status and outcomes of the CSES-01 mission, along with the future prospects of the mission with the launch of CSES-02.