



Contribution ID: 369

Type: **Talk**

[358] The NUSES space mission

Friday 8 September 2023 13:45 (15 minutes)

The NUSES space mission is a novel project based on a satellite developed by TAS-I housing two payloads known as TERZINA and ZIRÈ. ZIRÈ is designed to explore low-energy cosmic rays and gamma rays for instance from gamma-ray bursts. ZIRÈ will conduct measurements of electrons, protons, and light nuclei ranging from a few to hundreds of MeV and new tools for detecting cosmic MeV photons and monitoring magnetosphere-ionosphere-lithosphere coupling (MILC) signals. TERZINA, the detector on which the presentation focuses, is a pathfinder for Cherenkov detection from space emitted by atmospheric showers created by ultra-high-energy cosmic rays (UHECRs) in the limb of the Earth's atmosphere. TERZINA is a pathfinder also towards the detection of high-energy astrophysical neutrinos skimming the Earth's surface. Additionally, NUSES aims to pave the way for technology in space for future missions by testing silicon photomultipliers and innovative low-power-consuming electronics. TERZINA will provide valuable insights for potential future physics missions, such as POEMMA, which is focused on UHECR detection and UHE neutrino astronomy. This presentation will discuss the current status of the NUSES project design, as well as the scientific and technological objectives of the mission.

Theoretical Work

Primary author: Dr TRIMARELLI, Caterina (UNIGE)

Presenter: Dr TRIMARELLI, Caterina (UNIGE)

Session Classification: Nuclear, Particle- & Astrophysics (TASK - FAKT)

Track Classification: Nuclear, Particle- and Astrophysics (TASK)