

The NUSES space mission

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NUSES is a new space mission project promoted by the Gran Sasso Science Institute (GSSI) in collaboration with the Italian National Institute of Nuclear Physics (INFN) and Thales Alenia Space Italy (TAS-I), devoted to the exploration of new technologies and observational approaches for space based cosmic ray studies. The mission consists of two detectors operating onboard the NUSES satellite: TERZINA and ZIRE'.

TERZINA is a pathfinder Cherenkov telescope for the study of EAS induced by high energy cosmic rays and astrophysical, Earth skimming, neutrinos, with a focal plane made by SiPMs. The use of SiPMs will be exploited also for the ZIRE' payload, mainly devoted to flux measurements of electrons, protons and light nuclei with energies spanning from few up to hundreds of MeVs, but also operating with a novel concept as cosmic MeV gamma ray detector. A further objective for ZIRE' will be the study of space weather phenomena and of possible correlations among seismic activity on ground and low energy electrons and proton fluxes due to magnetosphere-ionosphere-lithosphere coupling (MILC).

This contribution will give an overview about the scientific goals, the adopted technologies and the status of the ongoing activities.

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