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The Gamma Ray Burst monitor of the Zirè instrument on board the NUSES space mission

The Zirè experiment is part of the NUSES space mission, proposed by the Gran Sasso Science Institute (GSSI) in collaboration with many Institutes and Universities from Europe and US. Zirè science goals include the measurements of charged particles and light nuclei from few up to hundreds of MeVs, for the study of low energy CRs, space weather phenomena and possible Magnetosphere-Litosphere-Ionosphere Coupling (MILC) signals. A further goal of the experiment is to test new tools for the detection of photons in the energy range of 0.1 MeV - 10 MeV, allowing the investigation of transient phenomena like Gamma Ray Bursts (GRBs). A high density segmented calorimeter exploiting novel scintillator crystals and Silicon Photo Multiplier (SiPM) technology for the readout system will serve this purpose along with the other goal of calorimetric energy measurement of the CR charged particles. In this work, we discuss the functionality of the calorimeter as a GRB monitor through the calculation of its performance in terms of effective area and sensitivity.

Collaboration(s)

on behalf of the NUSES collaboration

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