

Monte Carlo simulation of the OLVE-HERO detector

Tuesday, 27 June 2023 16:45 (15 minutes)

A project of the OLVE-HERO space detector is proposed for CR measurement in the range 10¹²-10¹⁶ eV, which will include a large ionization-neutron 3D calorimeter with a high granularity and geometric factor of ~16 m²sr. Current OLVE-HERO main detector is expected to be an image calorimeter of a boron loading of plastic scintillator with a tungsten absorber. Such a calorimeter allows one to measure an additional neutron signal which will improve the energy resolution of the detector and mainly the rejection power between electromagnetic and nuclear CR components will be increased by factor 30-50. Preliminary results of modeling the threshold sensitivity from the energy of CR particles for a simplified version of the detector are presented, where the threshold value is defined by the thermal neutron number in the detector.

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Session Classification: Poster Session

Track Classification: Cosmic rays of very high energies (> 1 PeV)