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Simulations for CALET Energy Calibration Confirmed Using CERN-SPS Beam Tests

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CALorimetric Electron Telescope (CALET) is a detector for the precise measurement of cosmic ray electrons, gamma-rays and nuclei on the International Space Station. CALET has an imaging and a thick calorimeter, which provide excellent energy resolution and particle identification. For the on-orbit calibration, we plan to use the minimum ionizing particles of cosmic rays such as protons and helium nuclei. We have carried out MC simulations to develop an algorithm of penetrating event selection by event reconstruction and to estimate the on-orbit event rate for the calibration. We have also carried out the beam tests at the CERN-SPS to assess the detector performance and the validity of our MC simulation and calibration methods. In this paper, we present the calibration methods and expected detector performance with beam test results.

Collaboration

CALET

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