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On-Orbit Energy Calibration of the Calorimeter on the ISS-CREAM Instrument Using the Boronated Scintillator Detector

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The Cosmic Ray Energetics And Mass instrument on the International Space Station (ISS-CREAM) aims to measure the energy spectra of cosmic ray (CR) nuclei from Z=1 to Z=26 with energies from 10^{12} eV to 10^{15} eV. The calorimeter (CAL) was designed to measure the energy of the CR particles. The ISS-CREAM on-orbit data provide evidence that the CAL may have either suffered from an efficiency problem or its energy scale may be in need of calibration. As a result, a careful scrutiny of the absolute energy calibration of the CAL is needed. We propose an approach to calibrate the energy scale using the on-orbit data of the boronated scintillator detector, which is independent of CAL data and reduces potential bias. In this talk we will discuss the issues revealed by the on-orbit data, demonstrate how this can be corrected using the boronated scintillator detector and present preliminary results.

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