

Cosmic-ray Heavy Nuclei Spectra Using the ISS-CREAM Instrument

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Cosmic Ray Energetic And Mass for the International Space Station (ISS-CREAM) was designed to study high-energy cosmic-rays on the ISS. The ISS-CREAM instrument can measure high energy cosmic rays up to PeV energies and recorded data from August 22nd, 2017 to February 12th, 2019. In this analysis, the silicon charge detector (SCD), calorimeter (CAL) and top and bottom counting detectors (TCD/BCD) are used. The SCD is composed of 4 layers and provides the measurement of cosmic-ray charges with resolution of ~ 0.2 e. The CAL is composed of 20 interleaved tungsten plates and scintillators. It measures the energies of the incident cosmic-ray particles and provides a high energy trigger. The TCD/BCD consist of photodiode arrays and plastic scintillators and provide a low energy trigger. In this analysis, the SCD top two layers are used for charge determination. The measured energy distribution from CAL is deconvolved into an incident energy distribution. Monte-Carlo simulation data is used to calculate efficiency. We will present preliminary results of cosmic-ray heavy nuclei spectra from the ISS-CREAM instrument.

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Subcategory

Experimental Results

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