

On-orbit performance of the DAMPE BGO calorimeter

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The DArk Matter Particle Explorer (DAMPE) is the first Chinese cosmic-ray direct detection experiment. It has been operating smoothly on-orbit since its successful launch at the end of 2015. Currently, its sub-detectors and the satellite are in good working order. The DAMPE payload employs a BGO Calorimeter for energy measurements, trigger and e/p identification. The calorimeter is constructed of 308 BGO crystals, and PMTs are coupled to the crystals with optical filters to readout scintillation light. In this work, we will present the status and performance of the calorimeter, including orbit calibration, energy measurement, especially in TeV range, detector endurance, and long term performance in a duration of 5.5 years.

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