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TeV particle direct detection in space - Recent results from the DAMPE mission

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Summary

Since its successful launch to a Low Earth Orbit in December 2015, the DAMPE (DARk Matter Particle Explorer) satellite mission has been performing excellently, which allows the experiment to collect a large high quality data sample of high energy cosmic rays directly in space. With a relatively large acceptance, a thick BGO homogeneous calorimeter, and a precise silicon tracker, DAMPE is designed to measure multi-TeV particles in space with unprecedented precision. A first measurement of electron plus positron total flux up to 4.6 TeV based on the first 18 months of data has been published. Other results, including proton and Helium fluxes up to 100 TeV/nucleon, are becoming available.

In this talk, the in-orbit performance of the DAMPE detector as well as the latest DAMPE data analysis results will be presented.

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