

DAMPE and its first year in orbit

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The Dark Matter Particle Explorer (DAMPE), is a space mission within the strategic framework of the Chinese Academy of Sciences, resulting from a collaboration of Chinese, Italian, and Swiss institutions, is a new addition to the growing number of particle detectors in space. It was successfully launched in December 2015 and has commenced nominal science operations since shortly after launch. Lending technologies from its predecessors such as AMS and Fermi-LAT, it features a powerful segmented electromagnetic calorimeter which thanks to its 31 radiation lengths enables the study of charged cosmic rays in the energy domain of up to 100 TeV and gamma rays of up to 10 TeV. The calorimeter is complemented with a silicon-tungsten tracker converter which yields a comparable angular resolution as current space-borne pair-conversion gamma-ray detectors. In addition, the detector features a top anti-coincidence shield made of segmented silicon plastic scintillators and a boron-doped plastic scintillator on the bottom of the instrument to detect delayed neutrons arising from cosmic ray protons showering in the calorimeter. In this contribution I will present an overview of the mission and summarize the latest results in the domain of charged cosmic rays, gamma rays and heavy ions that were obtained using 1 year of orbit data.

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