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the DAMPE space mission: first data

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The DAMPE (Dark Matter Particle Explorer) satellite was launched on December 17, 2015 and is in data taking since few days after.

It was designed in order to properly work for at least three years and, thanks to its large geometric factor (about 0.3 m² sr for protons and nuclei), is integrating one of the largest exposure for galactic cosmic ray studies in space.

It is primarily optimized for the study of electrons and gammas but it can provide good tracking and calorimetric performances also in the case of protons and nuclei, together with the possibility of ion identification through multiple charge measurements.

The information from the various subdetectors (e.g. ion charge measurement, precision tracking, shower topology) allows an efficient identification of the electron signal over the large (mainly proton-induced) background. As a result, the all-electron spectrum will be measured with excellent resolution from few GeV up to few TeV, thus giving the possibility to identify possible contribution of nearby sources.

A report on the mission goals and status will be given, together with in orbit detector performance and first data coming from space.

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