

Precision research of cosmic rays from space with PAMELA detector: Results and perspectives

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The Pamela spectrometer was launched in 2006 from the cosmodrome of Baikonur, Kazakistan, on board the Russian satellite Resurs-DK1. Since then, it has been collecting cosmic rays from its 70 degrees inclination, 600 km altitude polar orbit. This orbit allows to sample particles of trapped, semi-trapped nature in the Earth geomagnetosphere, of solar origin (emitted in solar particle events), of galactic origin (modulated by solar activity). Antiparticles of galactic origin can constrain and provide information on the dark matter component in the galaxy. Furthermore the Proton and Helium spectra provide detail information on the acceleration and propagation processes in the galaxy. At lower energy, particles of solar and trapped nature provide crucial clues on the acceleration and propagation processes in the Heliopshere. In this talk we will discuss some of these recent results of Pamela and the implication for various fields of research.

Primary author: Dr CASOLINO, Marco (Riken)

Presenter: Dr CASOLINO, Marco (Riken)

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