



Contribution ID : 289

Type : Oral

## The Physics of Pamela Space Mission

Thursday, 5 July 2007 08:42 (0:12)

### Abstract content

The Space Mission Pamela, launched in orbit on 15 June 2006, represents the state-of-the-art of the investigation of the cosmic radiation to addressing the most compelling issues facing astrophysics and cosmology: the nature of the dark matter that pervades the universe, the apparent absence of cosmological antimatter, the origin and evolution of matter in the galaxy. The primary scientific goal of the Pamela investigation is the search for evidence of non baryonic particles falling outside Standard Model particles physics and of heavy antinuclei.. Concomitant, but not secondary, goals are the study of the energy dependence of cosmic ray lifetimes in the Galaxy, the validation of models of acceleration, transport and secondary production of cosmic radiation in the Galaxy, the monitoring of the solar activity and the knowledge of the role of solar and terrestrial relationships in the energetic particle propagation in the heliosphere. The observational objectives are the measurements of the fluxes and the energy spectra of antiprotons, protons, positrons, electrons and light nuclei in a very large energy range and the search for antinuclei with a sensitivity of the order of  $10^{-7}$  in antiHe/He .

### If this papers is presented for a collaboration, please specify the collaboration

PAMELA Collaboration, INFN, MEPHI, Siegen, KTH, Lebedev, Ioffe

### Summary

### Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 2 (OG part 1), pages 19-22

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**Session Classification :** OG 1.1, OG 1.2

**Track Classification :** OG.1.1