



Contribution ID: 108

Type: oral

New measurement on the time dependence of the cosmic-ray electrons and positrons by the PAMELA experiment between July 2006 and December 2015.

Monday, 5 September 2016 17:00 (15 minutes)

The satellite-borne PAMELA experiment has been continuously collecting data since 15th June 2006, when it was launched from the Baikonur cosmodrome to detect the charged component of cosmic rays over a wide energy range and with an unprecedented statistics. The apparatus design is particularly suited for particle and antiparticle identification. Moreover, the PAMELA long flight duration allows to study the time variation of low energy (<30 GeV) cosmic rays, measuring the differential energy intensity of oppositely charged particles down to ~ 70 MeV.

We present preliminary results on the time-dependent electron and positron intensity measured at Earth between July 2006 and the end of 2015 in the energy range between 500 MeV and 5 GeV.

This time period spans between the $A<0$ solar minimum of solar cycle 23 (2006-2009) till the middle of solar maximum of $A>0$ solar cycle 24.

The positron to electron ratio allows a detailed study of charge-sign dependent solar modulation introduced by particle drifts.

These results provide the first clear indication of how drift effects unfold with time during different phases of the solar activity and their dependence on the particle rigidity and the cyclic polarity of the solar magnetic field.

Primary author: MUNINI, Riccardo (TS)

Co-authors: BOEZIO, Mirko (TS); DI FELICE, Valeria (ROMA2); Dr MIKHAILOV, Vladimir (NRNU MEPHI)

Presenter: MUNINI, Riccardo (TS)

Session Classification: Parallel