

One page executive summary

**1285. Study of the solar modulation for the cosmic ray isotopes
with the PAMELA collaboration**

What is this contribution about?

This contribution reports the solar modulation effects observed in the time evolution of the fluxes measured in a low energy range for hydrogen and helium isotopes in cosmic rays, with the PAMELA experiment within an almost whole solar cycle.

Why is it relevant/interesting?

Using a state-of-the-art numerical model for the propagation of cosmic rays in the Heliosphere, it is then possible to estimate the rigidity and time dependence of the propagation parameters, which better reproduce these fluxes.

What have we done?

We have measured preliminary yearly fluxes for protons, deuterons, helium-3 and helium-4 nuclei in cosmic rays as a function of rigidity for the years from 2006 to 2014 and the related deuteron over proton and helium-3 over helium-4 flux ratios.

What is the result?

Solar modulation effects were observed in the measured fluxes of each concerned isotope, in fact the fluxes get higher in 2009 in correspondence with the solar minimum and then decrease down to 2014 approaching the solar maximum.