

Abstract number: S4-167

4. High energy cosmic rays (HE-CR I)

H, He, Li and Be Isotopes in the PAMELA-Experiment

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On the 15th of June 2006, the PAMELA satellite-borne experiment was launched from the Baikonur cosmodrome and it has been collecting data since that time. The apparatus comprises a time-of-flight system, a magnetic spectrometer (permanent magnet) with an silicon-microstrip tracking system, an imaging calorimeter built from layers of silicon-microstrip detectors interleaved with plates of tungsten, an anti-coincidence system, a shower tail scintillator-counter and a neutron detector. The scientific objectives addressed by the mission are the measurement of the antiprotons and positrons spectra in cosmic rays, the hunt for antinuclei as well as the determination of light nuclei fluxes from hydrogen to oxygen in a wide energy range and with high statistics. The instrument in its detector combination is also capable to identify isotopes. In this paper the identification capability for light nuclei isotopes (from hydrogen to beryllium) using multiple dE/dx measurements in the calorimeter will be shown and results of the isotopic ratios will be presented.