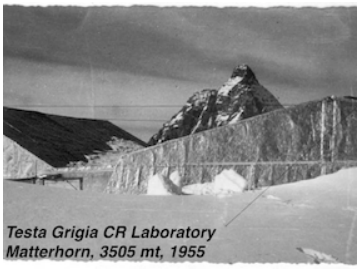

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Solar energetic particle events measured by the PAMELA mission

Wednesday, 7 September 2016 11:30 (15 minutes)

The PAMELA satellite experiment, operating since June 2006, is providing precise observations of the cosmic-ray radiation in low Earth orbits. In particular, PAMELA is accurately measuring the fluxes of Solar Energetic Particles (SEPs) related to solar flares and coronal mass ejections in a large interval (>80 MeV), encompassing the low energy observations by other space-based instruments and the ground level enhancement data by the worldwide network of neutron monitors. Its unique observational capabilities include the possibility of measuring the flux angular distribution and thus investigating possible anisotropies related to SEP events. The analysis is supported by back-tracing techniques based on a realistic modeling of the terrestrial magnetosphere, enabling to reconstruct the asymptotic directions of arrival with respect to the interplanetary magnetic field. PAMELA results significantly enhance the characterization of SEP fluxes in the near-Earth space, constraining the scenarios for particle acceleration and transport mechanisms.

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