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## MAGNETOSPHERIC EFFECTS ON HIGH-ENERGY SOLAR PARTICLES DURING THE 2012 May 17th EVENT MEASURED WITH THE PAMELA EXPERIMENT

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The great challenge in constraining scenarios for solar energetic particle (SEP) acceleration is due to the fact that the signatures of acceleration itself are heavily modified by transport within interplanetary space. During transport, SEPs are subject to pitch angle scattering by the turbulent magnetic field, adiabatic focusing, or reflections magnetic structures. Ground Level Enhancements (GLEs) provide an ideal way to study acceleration with minimal transport. Their different morphologies has led many to believe that two distinct acceleration processes are at work. PAMELA (Payload for Antimatter-Matter Exploration and Light-nuclei Astrophysics) offers unique possibilities to study the link between the highest energy GLEs and the low-energy in-situ observations. It bridges a critical gap in energy while also providing pitch angle measurements above several GeVs. This has led to constraining, for the first time, the effects of transport over a broad range in energy. In this work, we present a unique high-energy SEP observation from PAMELA of the 2012 May 17 GLE and interpret the observed pitch angle distributions as a result of scattering in the magnetosheath.

### Collaboration

– not specified –

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433

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