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Precise and Systematic Long-duration Study of Solar Modulation on Elementary Particles and Nuclei with AMS on the Space Station

We present the precise monthly time variation of the e^+ , e^- , p and He fluxes by the Alpha Magnetic Spectrometer on the International Space Station. The data were collected during the ascending phase of solar cycle #24 through its maximum and toward its minimum. This covers one half solar cycle. For the first time, the time evolution of cosmic rays of opposite charges and different mass and charge are simultaneously measured during the reversal of the Sun's magnetic field polarity. These measurements are crucial for solar modulation modelling during periods of high-level solar activity. They also provide constraints for modelling astrophysical backgrounds for dark matter searches.

Experimental Collaboration

AMS Collaboration

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