

Galactic cosmic ray modulation in the heliosphere based on Australian muon telescopes data. Recurrent variations of cosmic rays intensity and anisotropy

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We study the galactic cosmic ray modulation in the heliosphere based on Australian muon telescopes data. We analyze the modulation parameters of galactic cosmic ray transport in the heliosphere retrieved from GCR anisotropy for solar cycle 24 covering the period 2006-2018.

We use the Fourier analysis and wavelet methods to study the periodicity in the GCR intensity and anisotropy. We re-analyze the polarity dependence of the recurrent 27-day GCR variations for high energy cosmic rays ($R_m \sim 60$ GV) in 2007-2009 for negative $A < 0$ solar magnetic polarity and 2017-2018 for positive $A > 0$. Results will be confronted with current modulation theories. We examine the diffusion-convection-drift implications and the solar cycle and solar magnetic polarity dependence of cosmic ray modulation for muon data.

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