

# Study Of Cosmic Ray Spectral Hardening Using GALPROP

*Monday 19 July 2021 18:12 (12 minutes)*

Significant spectral hardening at around 200 GV magnetic rigidity has been reported by AMS-02, ATIC-2, CALET, CREAM, and PAMELA. This has been observed in high-accuracy measurements of various nuclei energy spectra of both primaries and secondaries. To explain the spectral hardening while maintaining proper B/C and p/He ratios, we study 3 approaches in a reacceleration model: adding a diffusion coefficient break, introducing extra injection spectra breaks, and a combination of both. We use the numerical code GALPROP to compute the propagation of cosmic rays with such parameter sets on the rigidity dependence of source and propagation parameters. Implications on the antiproton and positron spectra will be discussed.

## Keywords

source spectra; propagation model; GALPROP;

## Collaboration

## other Collaboration

## Subcategory

Theoretical Results

**Primary authors:** WU, Hongyi (University of Maryland); SEO, Eun-Suk (University of Maryland); PTUSKIN, Vladimir (IZMIRAN)

**Presenter:** WU, Hongyi (University of Maryland)

**Session Classification:** Discussion

**Track Classification:** Scientific Field: CRD | Cosmic Ray Direct