PROCEEDINGS OF SCIENCE

Cosmic Ray Intensity Enhancements at Heliospheric Current Sheets

József Kóta[*†]
The University of Arizona, Tucson AZ 85721-0092, USA
E-mail: kota@lpl.arizona.edu

Kazuoki Munakata
Physics Department, Shinshu University, Matsumoto, Japan
E-mail: kmuna@shinshu.ac.jp

Heliospheric current sheets (HCSs) allow fast particle drifts along the HCS, which may result in intensity enhancements of cosmic rays if the HCS happens to connect to a region of higher cosmic-ray density, and the direction of drift is favourable. We report on simple numerical studies using stochastic integration method to obtain the density and anisotropy of high-rigidity (in the 10-50 GV range) around the HCS in various magnetic structures. We apply a backward-tracing scheme to follow the trajectories of an ensemble of pseudo-particles in the heliospheric magnetic field (HMF). THe model HMF also includes a random component to account for scattering. Preliminary results will be presented for Forbush decreases.

36th International Cosmic Ray Conference -ICRC2019-
July 24th - August 1st, 2019
Madison, WI, U.S.A.

[*]Speaker.
[†]

© Copyright owned by the author(s) under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (CC BY-NC-ND 4.0).

PoS(ICRC2019)1097