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On the Anisotropic Transport of Galactic Cosmic Ray Protons

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Galactic transport models for cosmic rays involve the diffusive motion of these particles in the interstellar medium. Owing to the large-scale structured Galactic magnetic field, this diffusion must be expected to be anisotropic with respect to the local field direction. After a brief discussion of the principal structure of the fully anisotropic diffusion tensor, we demonstrate the significance of considering the latter for the propagation of Galactic cosmic rays by computing the resulting energy spectra in dependence on Galactic location.