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Effects of Turbulent Magnetic Fields in Cosmic Ray Anisotropy

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Cosmic ray anisotropy has been observed to be present in a wide energy range by a variety of experiments such as Milagro and the IceCube Observatory. However, a satisfactory explanation has been elusive for more than fifteen years now. A possible solution for the TeV-PeV cosmic ray anisotropy is the introduction of turbulent magnetic interactions on the arrival direction. We perform test particle simulations in compressible magnetohydrodynamic turbulence to study how cosmic rays' arrival direction distribution is perturbed when they stream along the local turbulent magnetic field. In this work, we discuss the effects arising from propagation in this inhomogeneous and turbulent interstellar magnetic field.

Collaboration

– not specified –

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