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Modeling of cosmic-ray anisotropy at TeV energies in an MHD model heliosphere

Past and on-going cosmic-ray experiments have reported small ($\sim 0.1\%$) anisotropies in the arrival directions of TeV cosmic rays observed at the Earth.

We are attempting to estimate anisotropic features at the heliospheric boundary by applying the idea of Liouville mapping to the data of the Tibet AS γ experiment.

Our preliminary results have indicated small, possibly spurious, anisotropic structures, with angular scales of $\sim 10^\circ$ in the cosmic-ray intensity distribution at the heliospheric boundary, and we expect that the higher-order residues of these structures at the heliospheric boundary could be removed if the stochastic scattering of cosmic-ray particles by magnetic irregularities inside the heliosphere are somehow taken into account in the mapping process.

In this presentation we will present the latest results of our improved intensity-mapping method.

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