Cosmic ray transport in a turbulence field

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Transport of cosmic rays (energetic particles) in a turbulence field remains to be an important issue, both from astrophysical and nonlinear science points of view. In particular, it is known that the transport in a plasma with large amplitude MHD turbulence can exhibit properties of non-gaussian statistics. In this presentation, we show some results on numerical integration of the so-called fractal diffusion/transport equation, which is known to model time evolution of such a dynamical system. Applications to the diffusive shock acceleration will also be discussed.

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