

Particle acceleration in turbulent medium

Recent advances in MHD turbulence call for fundamental revisions in the paradigm of cosmic ray transport and acceleration. I would like to clarify some outstanding issues related to particle transport and acceleration in realistic turbulent astrophysical environments. I shall discuss both the transport and acceleration of CRs, and demonstrate that compressible fast modes dominate the interactions. I shall address effects arising from the preexisting turbulence and waves generated by CR instabilities and provide implications for solar flares and SNRs. I shall also discuss how Gamma Ray Bursts (GRBs) properties can be explained by a model based on turbulent reconnection.

Primary author: Prof. YAN, huirong

Presenter: Prof. YAN, huirong

Track Classification: Particle Acceleration Mechanisms