



ID de Contribution: 30

Type: Non spécifié

Magnetic field diffusion in multi-fluid MHD turbulence

mardi 22 mai 2018 12:15 (20 minutes)

Diffusion of, and turbulence in, magnetic fields are believed to be critical to various processes in astrophysics such as particle acceleration, magnetic reconnection and star formation. It has been suggested that MHD turbulence itself can play a critical role in magnetic field diffusion. If this is true then it implies that some of our notions about global structures in turbulent astrophysical media, such as the canonical hour-glass shape of magnetic fields in the cartoon version of low mass star formation, are internally inconsistent. In this talk we will discuss some results on the diffusion of magnetic fields in MHD turbulence following the general paradigm used by Lazarian & Vishniac (1999). We will begin by first giving a short introduction to MHD turbulence, some of the ideas of turbulent magnetic diffusion and multi-fluid MHD. We then review the results of numerical simulations on turbulent diffusion and present new results on turbulent diffusion in a weakly ionised medium, such as may be found in star forming regions and proto-planetary disks.

Contribution

Talk

Auteur principal: Prof. DOWNES, Turlough (Centre for Astrophysics and Relativity, Dublin City University)

Orateur: Prof. DOWNES, Turlough (Centre for Astrophysics and Relativity, Dublin City University)

Classification de Session: S1 Theory and models