

Turbulence and Dissipation in Collisionless Astrophysical Plasmas

Speaker: Christoph Federrath (The Australian National University)

Title: "The Role of Turbulence and Magnetic Fields for Star Formation"

Abstract:

Turbulence and magnetic fields are key ingredients for modern star formation theories. I will present a theory for the star formation rate, based on the density PDF of MHD turbulence. Comparison with simulations and observations show that the theoretical model provides a good description of the relevant physical processes that determine star formation. Finally, a new set of simulations investigating the growth rates and saturation levels of the turbulent, small-scale dynamo in highly compressible, supersonic plasmas will be presented and I will highlight some of the differences to classical dynamos in incompressible turbulence.