

Turbulence and shocks in high-beta plasmas

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High-beta plasmas are common in astrophysical environments, such as the intracluster medium (ICM) of galaxy clusters and the interplanetary medium (IPM) of the solar system. Observations and theoretical arguments suggest that the plasmas in such environments are in the state of turbulence, where highly nonlinear and complex physics is involved. Here we report high-resolution simulations to study the turbulence in high-beta plasmas. Along with the properties of the turbulence, we discuss the role of shocks and the energy dissipation.

Keywords: turbulence, shock wave, high-beta plasma