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SEMINAR

Magnetohydrodynamic relaxation of visco-resistive plasma

(Sanjay Kumar, USO/PRL)

The relaxation dynamics of a magnetized plasma system is a subject of fundamental importance in magnetohydrodynamics. The terminal states of such dynamical process are found to be rather quiescent and long lived, called as relaxed state. For example, in laboratory plasma confinement scheme like spheromak and RFP, magnetic field is believed to be in relax state. In solar corona, more than expected life time of coronal loops qualify them as relaxed states. The traits are to be looked for in a relaxing system are, predominantly non linearity and ideal integrals of motion which are conserved in absence of dissipation.

In most of the existing theories of relaxation, only the terminal states are predicted without any details of the dynamics. In our study, we have tried to explore the dynamics of relaxation in a visco-resistive plasma with coronal magnetic field configuration as a prototype example using numerical simulation.

Date: Jul 12, 2013

Time: 11:30 hrs

Venue: USO Seminar Hall