

Seminar

Institute for Plasma Research

Title : Role of MHD waves and small-scale transients
in the heating of solar corona

Speaker : Dr. Girjesh Gupta
Inter-University Centre for Astronomy and
Astrophysics, Pune

Date : 4th May 2017 (Thursday)

Time : 11.30 AM

Venue : Seminar Hall, IPR

Abstract :

The tenuous outer atmosphere of the Sun commonly known as 'corona', is orders of magnitude hotter (>1 MK) than the solar surface (< 6000 K). Heating of the solar corona remains one of the most puzzling problems in the astrophysics and known as 'the coronal heating problem'.

Corona is a magnetically dominated environment, consisting of a variety of plasma structures such as X-ray bright points, coronal holes and coronal loops. There are several theories proposed to explain the hot corona, however, to identify any one dominant process is extremely difficult to do. Magnetohydrodynamics (MHD) waves and magnetic reconnection, are currently the most promising heating models. In this presentation, I will mainly discuss different MHD wave modes possible in the solar corona and their observational signatures. Recent observational findings of propagation, and damping of MHD waves in the solar atmosphere and their contribution in the heating of solar corona will be presented. Some examples of small-scale transient energy release events which resulted due to magnetic reconnection along with their importance in the heating of solar corona will be discussed.
