



ICTS

INTERNATIONAL
CENTRE *for*
THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Colloquium

Title : Looking beyond MHD: Implications for the plasma Universe

Speaker : Manasvi Lingam, Harvard University, USA

Date : Monday, May 21, 2018

Time : 3:00 PM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : There has been a growing realisation in plasma physics that models more sophisticated than magnetohydrodynamics (MHD) have the potential to further our understanding of astrophysical plasmas. I will briefly elucidate the dynamical equations for these models, and how they differ from that of MHD. Next, I will discuss their implications in the context of plasma turbulence, dynamos and reconnection. In particular, the focus will be on a few select examples such as the solar wind, magnetogenesis and the generation of large-scale magnetic fields to demonstrate how these "beyond MHD" models lead to results that are quantitatively very different from those of ideal MHD, some of which are already borne out by observations.