

ICTS Colloquium

- Title : Angular momentum transport in accretion flows
- Speaker : Prateek Sharma, Indian Institute of Science, Bangalore
- Date : Monday, March 19, 2018
- Time : 3:00 PM
- Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : Accretion disks are ubiquitous in astrophysics, from protoplanetary disks out of which planets coalesce to the central engines of most energetic transients in the universe. Unlike stars, which are spherical and pressure-supported, accretion disks are supported by the centrifugal force. For gravitational energy to be released via accretion, matter has to quickly lose angular momentum. Turbulent transport is often invoked for efficient angular momentum transport but the cause for turbulence is only known in ionized disks. For such disks, there is a powerful local magnetohydrodynamic (MHD) instability known as the magneto-rotational instability (MRI) that grows, saturates and leads to fully developed turbulence. The problem of angular momentum transport is still open for the neutral protoplanetary disks which do not couple to magnetic fields. I shall give a brief overview of this field, making analogies with various ideas in fluid dynamics.