

ICTS Postdoc/Graduate Student Seminar Series

Title : Patterns near the onset of convection in rotating Rayleigh-Bénard systems

Speaker : Priyanka Maity, ICTS-TIFR, Bangalore

Date : Friday, June 23, 2017

Time : 11:15 AM

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : Rayleigh-Bénard convective systems, simplified models to study thermal convection in fluids, show a rich variety of pattern forming instabilities and bifurcations. The dynamics of rotating Rayleigh-Bénard convection is characterized by three dimensionless numbers: The Rayleigh number, which is a measure of the buoyancy force; the Taylor number, which is a measure of dimensionless rotation rates; and the Prandtl number, which is the ratio of two diffusive time scales.

I will mainly talk about the various observed patterns in the vicinity of the onset of turbulence and the associated bifurcations. I will also discuss a low-dimensional model, consisting of coupled ordinary differential equation of first order, which can mimic the observed patterns and thus help in understanding the associated bifurcations.

Note: This will be an ongoing biweekly seminar series (Fridays, 11:15 am) by the ICTS postdocs and graduate students