



## **ICTS Special Colloquium**

Title : Exotic patterns in Faraday waves

Speaker : Laurette Tuckerman, Sorbonne University, France

Date : Thursday, February 20, 2020

Time : 11:30 am

Venue : Emmy Noether Seminar Room, ICTS Campus, Bangalore

Abstract : For the Faraday instability, by which standing waves appear on the free surface of a vertically vibrated fluid layer, the wavelength is controlled by the forcing frequency rather than by the fluid depth, making it easy to destabilize multiple wavelengths everywhere simultaneously. In the 1990s, this technique was used to produce fascinating new phenomena such as quasipatterns and superlattices. This in turn sparked a renaissance of interest in Faraday waves, leading to new mathematical theories and numerical simulations. We will discuss some of the exotic patterns found in recent numerical simulations, such as quasi-hexagons alternating with beaded stripes, a supersquare divided into four subsquares with synchronized diagonal blocks, Platonic solids alternating with their duals while drifting, and a twisted sheared secondary instability of square waves.