



ICTS Biophysics Seminar

Title : The dynamics of high-diversity ecosystems: insights from a complex systems' approach

Speaker : Thibaut Arnoult de Pirey (Technion, Israel)

Date : Thursday, 30th November 2023

Time : 11:30 am (IST)

Abstract : Many natural ecosystems are comprised of a large number of coexisting and interacting species. Thus, detailed modelling and characterization of the dynamics is unfeasible. Nonetheless, recent works have shown that insights on their phenomenology can be gained from studying canonical ecological models with many species and random interactions between them. In this talk, I will show that commonly observed qualitative features of dynamics of species-rich ecosystems, such as species turnover and broad distributions of abundances, are robust emerging properties of a chaotic phase of these high-dimensional systems. Importantly, this requires migration from an outside 'pool'. For isolated well-mixed systems, fluctuations in population sizes are so large that they drive species to extinction. This opens the door for a broader discussion on the interplay between spatial structure and dynamical fluctuations in diverse ecosystems.

Venue : **Offline:** Chern Lecture Hall

Online: Please click on the below link to join the talk

<https://zoom.us/j/91862283132?pwd=a3ZRSUhaWXhYMUtBY0dTK0hxVjJqZz09>

Meeting ID: 918 6228 3132

Passcode: 603660