



ICTS Biophysics Seminar

Title : Statistical physics across scales - from microbes to metacommunities

Speaker : Prajwal Padmanabha (University of Lausanne, Switzerland)

Date : Monday, 20 January 2025

Time : 2:30 PM (IST)

Abstract : Biological communities span multiple length scales in nature with many coexisting entities across all of them - from phages to forests. Explaining this diversity has been of particular focus in theoretical ecology - starting from well-known works of Lotka and Volterra. I will begin by giving a brief recap of how statistical physics offers tools to investigate the large number of interacting species. I will proceed to show some recent work on how these can help incorporate spatial and dispersal heterogeneity in metacommunities to understand mechanisms of coexistence. We will see some ongoing work on how this can be applied to tropical forest data to understand origins of species distribution patterns and their extinction risks. Going down the length scale, I will finish by discussing microbes are a manipulatable system that can help us validate/invalidate these tools.

Venue : Feynman Lecture Hall

Zoom Link: <https://icts-res-in.zoom.us/j/93467510394?pwd=s9oH7ER9DXMQbh1CxOTbWgsItQFH0G.1>

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