



## **ICTS Biophysics Seminar (HYBRID)**

**Title** : Emergent encoding of dispersal network topologies in spatial metapopulation models

**Speaker** : Prajwal Padmanabha (University of Padova)

**Date** : Friday, 01<sup>st</sup> September, 2023

**Time** : 11:30 AM (IST)

**Abstract** : The persistence of species in a given landscape is a pertinent question in macroecology. One of the pioneering works to quantify this was by Hanski and Ovaskainen (HO) in the early 2000s, where a single number could quantify the structure of the landscape, termed the metapopulation capacity, which would determine whether a focal species would survive or not. This took a zoomed-out perspective by ignoring the underlying processes of dispersal and hence, made phenomenological assumptions about the nature of colonization of new landscape areas. The talk will cover a recent work (currently under review) where we consider a generalization of the HO model by starting from a "microscopic" approach by accounting for different processes that would eventually lead to the HO case. The strength of this approach is that it allows for generalization beyond the fully connected landscapes that Hanski and Ovaskainen initially considered. In addition to enabling the study of more complex dispersal networks, this approach also extends to include directed dispersal and a straightforward manner to encompass different dispersal strategies and landscape properties into the HO approach.

**Venue** : **Offline:** AKR Meeting Room (ICTS)

**Online:** Please click the below link to join the seminar

<https://icts-res-in.zoom.us/j/89573954271?pwd=cm0xV3VtUTVqSlc2ZTVHL3FDUmdqQT09>