



INTERNATIONAL
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THEORETICAL
SCIENCES

TATA INSTITUTE OF FUNDAMENTAL RESEARCH

ICTS Fluid Seminar

Title : Role of Heterogeneous Ecosystems in Modulating Surface-Atmosphere Transport

Speaker : Sreenath Paleri (University of Wisconsin-Madison)

Date : Friday, 9th June 2023

Time : 11:00 AM (IST)

Abstract : The Earth's surface is heterogeneous at multiple scales owing to spatial variability in various properties. The atmospheric responses to these heterogeneities through fluxes of energy, water, carbon, and other scalars are scale-dependent and nonlinear. Observational studies and large eddy simulations have observed secondary circulations in the turbulent atmospheric boundary layer as coherent turbulent structures or thermally induced mesoscale circulations. This talk will discuss how airborne eddy covariance measurements can spatially resolve larger scale (meso- β , γ) stationary/slow-moving eddies tied to landscape heterogeneity. Large Eddy Simulations (LES) of the field campaign days were set up with an interactive land surface model, coupled with a soil and plant canopy model. The dynamical evolution of the circulations during the summer and autumn test cases, with differing atmospheric boundary layer static stabilities will be discussed.

Venue : Emmy Noether Seminar Room (ICTS)

Zoom link: <https://icts-res-in.zoom.us/j/83507788265?pwd=THNjTHJLUDZ0dzZIN0h5OUU1UzI6dz09>

Meeting ID: 835 0778 8265

Passcode: 090923