



## ICTS Biophysics Seminar

- Title** : Dynamics and information processing at different levels in cellular biochemical networks
- Speaker** : J Krishnan (Imperial College, London)
- Date** : Wednesday, 15<sup>th</sup> May 2024
- Time** : 3:30 PM (IST)
- Abstract** : Exploring information processing in biomolecular networks using structured systems approaches provides important insights for systems and synthetic biology.

Substrate modification by enzymes is a way to establishing protein functionality. We examine the intrinsic behaviour of basic substrate modification systems, exploring the role of substrate modification topology, reaction mechanism and commonality/distinctness of enzymes performing different modifications. We then focus on bridging the gap between substrate modification systems in isolation and as part of networks.

The next part of the talk focussing on a specific information processing characteristic: biphasic responses. We examine basic building blocks of biochemical networks and examine the possibility/impossibility of both substrate and enzyme biphasic responses. We use this to explore exemplar signalling systems (ERK signalling) and also explore the implications for network behaviour.

Finally,, we explore the effect of spatial organization in cellular biochemical networks, combining studies at the biochemical level, the network level and concrete exemplar cases.

- Venue** : Emmy Noether Seminar Room

Zoom link: <https://icts-res-in.zoom.us/j/93281413470?pwd=RnRxaTZpMy9JT0F6T05uRXIyR1g3UT09>

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