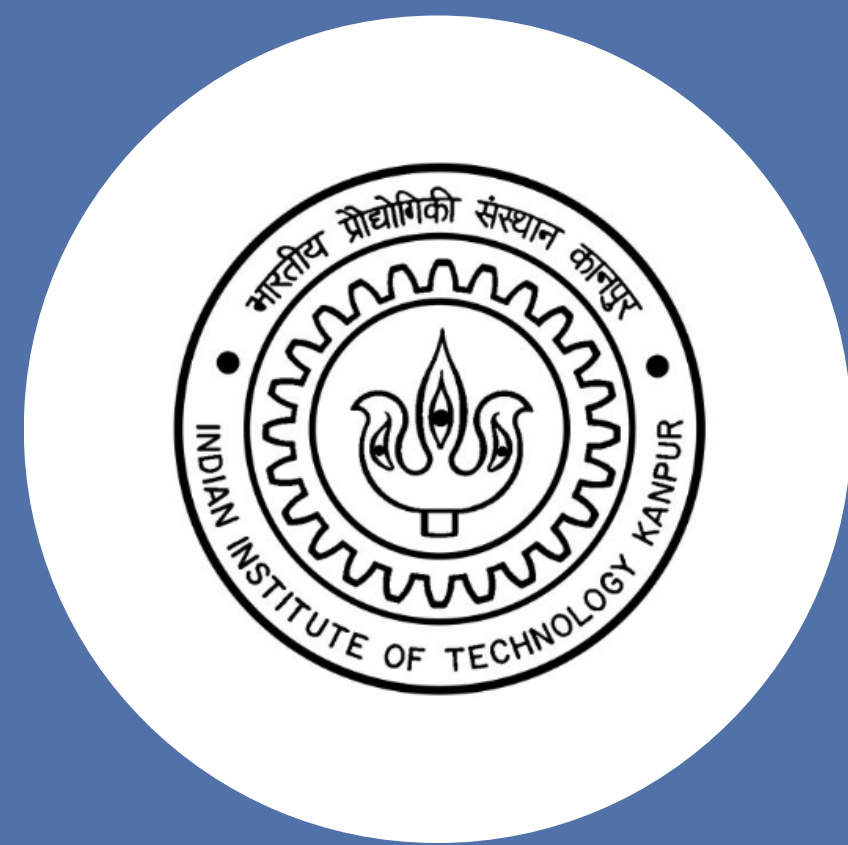
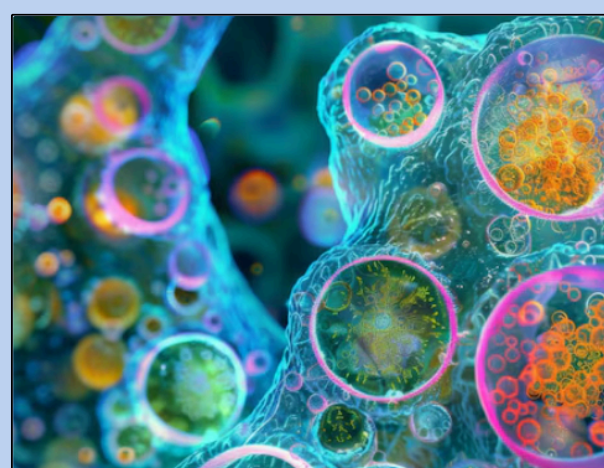
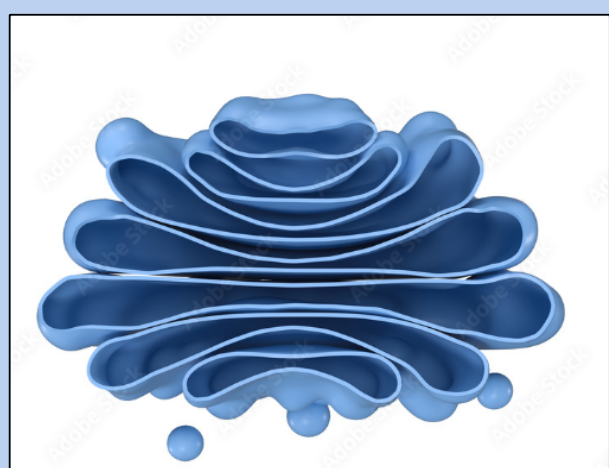
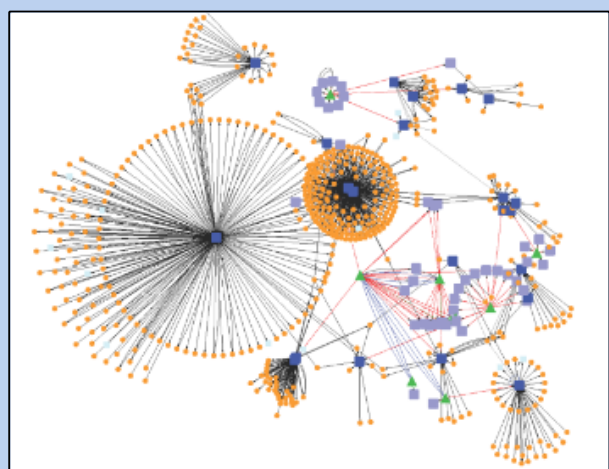


IIT Kanpur Physics Colloquium



Information Processing Distributed Cellular Systems



Speaker : Prof. Madan Rao (NCBS-TIFR, Bangalore)

Abstract

Recent advances in molecular and cell biology are exhorting us to seek a new language to describe biological reality. One such task is to address how physical and chemical processes in cells are translated into information (Paul Nurse, 20020) and to adequately describe the complex flows of information in living systems. This talk will explore attempts at building a conceptual framework for the processing of noisy molecular information in cells and tissues treated as Distributed Computing Systems. Professor Rao will delve into information decoding in tissues, and what are the optimal cellular strategies that ensure accurate inference of spatial position of cells during Morphogenesis. Apart from this, information encoding in cells in the context of synthesis of a complex molecular (Glycan) code, and what are the optimal cellular strategies and operational logic that ensure this, will also be discussed. Finally the talk explores the geometry of high dimensional inference landscapes with implications for dimensional reduction, redundancy and robustness in generic biological networks.

Venue



28th June (Friday), 2024
4:00 PM – 5:00 PM



FB 382 (Prof. Amal Kumar
Raychaudhuri Seminar Room
at the Department
of Physics)

All are welcome!

Join us to explore a new lens for understanding the remarkable information processing capabilities of living systems!