FriSBi

Frisbi

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Host:

Noisy biological systems in compartmentalized environmentsChemical reactions serve as central units for cellular information processing and control. However, many biochemical processes in cells take place in highly dynamic and compartmentalized environments, such as networks of interacting organelles. Effective theoretical models to study the interplay between noisy reaction dynamics and compartmentalization are sparse and in this talk, I will present some recent progress towards addressing this problem. In the first part of the talk, I will discuss how protein concentration fluctuations, which may arise from stochastic events in gene expression, are affected when the protein demixes into distinct liquid phases. Using a simple theoretical model that links protein concentration fluctuations to the physics of phase separation, I will show that concentration fluctuations can be significantly attenuated in the presence of phase separated compartments. I will present experimental single-cell data, which support this prediction. Later in my presentation, I will briefly talk about a more general mathematical formalism to describe stochastic reaction dynamics in compartmentalized environments and discuss potential applications to biology.

Friday, April 9, 2021 03:00pm - 04:00pm

Online Event ()

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.