Društvo biofizikov Slovenije

in

Institut za Biofiziko (MF)

Vas vabita na

biofizikalni seminar:

Prof. Shiwei Yan

Department of Physics, Beijing Normal University, China

STATISTICAL PHYSICS AND QUANTITATIVE DESCRIPTIONS OF BIOLOGICAL SYSTEMS

Systems biology aims to move beyond the study of single biomolecules and the interaction between specific pairs of molecules; its goal is to describe, in quantitative terms, the dynamic systems behavior of complex biological systems that involve the interaction of many components.
Two related developments are currently changing traditional approaches to computational systems biology modelling. First, stochastic models are being used increasingly in preference to deterministic models to describe biochemical network dynamics at the single-cell level. Second, sophisticated statistical methods and algorithms are being used to fit both deterministic and stochastic models to time course and other experimental data. Both frameworks are needed to adequately describe observed noise, variability and heterogeneity of biological systems over a range of scales of biological organization.
I will review how we have applied stochastic thermodynamics and statistical theory on the study of biochemical reactions. As examples, I will present a set of stochastic delay-differential equations, and molecular dynamical methods based on the full atomistic level, which are used to study the temporal behaviors of tumors suppressor p53 proteins.

Torek, 30. julij 2019, ob 13:15

Seminarska soba fizike na Institutu »Jožef Stefan«
(pritličje glavne stavbe, soba 106), Jamova 39, Ljubljana

Vljudno vabljeni!

Dodatne informacije: rok.podlipec@ijs.si

Društvo biofizikov Slovenije
Jamova 39, Ljubljana
http://www.drustvo-biofizikov.si/

Laboratorij za biofiziko, F5, IJS
Jamova 39, Ljubljana
http://lbf.ijs.si/