

PHYSICAL MATHEMATICS SEMINAR

Inferring and Programming the Structure and Dynamics of Macromolecular Machines

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ABSTRACT:

Physical biology has entered a data-rich era in which fluorescence imaging from living systems is increasingly producing voluminous spatial-temporal information on the complex structure and dynamics of macromolecular machines in their native, in vivo environment. In the first part of my talk I will present Bayesian approaches that we are developing to infer the large-scale, collective transport and assembly dynamics of chromosomes and macromolecules from live-cell fluorescence imaging. In the latter part of my talk I will present a computational framework that we have developed to program novel, biomimetic macromolecular function using DNA-based self-assembly, specifically targeted to light-harvesting constructs that recapitulate aspects of photosynthesis.

TUESDAY, OCTOBER 29, 2013

2:30 PM

Building E51, Room 149

(MIT-Tang Center)

*Reception following in Building E17, Room 401A
(Math Dept. Common Room)*

<http://math.mit.edu/pms/fall13/>



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