CLARK UNIVERSITY
DEPARTMENTS OF PHYSICS AND
MATHEMATICS/COMPUTER SCIENCE
JOINT COLLOQUIUM

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“Brownian web, Brownian net, and their universality”

ABSTRACT: A central theme of contemporary probability theory is the identification and understanding of large scale stochastic fluctuations which are universal. A classic example is the Central Limit Theorem (CLT), which establishes the universality of the Gaussian distribution. A functional CLT, known as Donsker’s Invariance Principle, establishes the universality of Brownian motion. I will introduce two universal limits, the Brownian web and the Brownian net, which are families of Brownian motion with branching and coalescence. I will explain how they arise as universal scaling limits of many one-dimensional interacting particle systems, such as the voter model, the zero-temperature dynamics of Ising and Potts models, planar aggregation, and random walks in random environments.

Wednesday, September 16, 2015

12:30 pm - Room BP 217, BioPhysics Building