

Distinguished Lecturer Series

Special Event

Sponsored by the Arthur and Rochelle Belfer
Institute of Mathematics and Computer Science

Sunday, 31 October 2010

Room 1, Ziskind Building

14:30 - 15:30

Constantine Dafermos
Brown University

Maximal Dissipation in Equations of Evolution

Abstract: The lecture will introduce examples of evolutionary equations with diverse provenances, in which a certain energy functional is conserved along classical solutions, the initial value problem generally admits a multitude of weak solutions, and argue that the solution along which the energy decays at a maximum rate may have special status.

15:30 - 16:00: Coffee break

16:00 - 17:00

Srinivasa Varadhan
New York University

Large Deviations for Random Graphs

Abstract: In this joint work with Sourav Chatterjee, we consider a random graph with n vertices, with probability p for any given edge to be present. We consider the case when p is fixed and n gets large. Asymptotically the expected number of edges is $\sim 1/2 n^2$ and the expected number of triangles is $\sim 1/6 n^3$. We look at the large deviation probabilities for these numbers as well as other subgraph counts. This allows us to say, for example, what a graph with more than the normal number of triangles will look like. The model exhibits an interesting phase transition.