



Stochastic Operations Research Faculty Candidate Seminar

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Statistics and Operations Research

University of North Carolina at Chapel Hill

Monday, February 19, 2018

11:00 am – 12:00 pm

260 Durham Hall

Mean-Field Methods in Large Stochastic Networks

Analysis of large-scale communication networks (e.g. ad hoc wireless networks, cloud computing systems, server networks etc.) is of great practical interest. The massive size of such networks frequently makes direct analysis intractable. Asymptotic approximations using hydrodynamic and diffusion scaling limits provide useful methods for approaching such problems. In this talk, we study two examples of such an analysis. In the first, the technique is applied to a model for load balancing in a large, cloud-based, storage system. In the second, we present an asymptotic method of solving control problems in such networks.