ACADEMIC SEMINAR

Multimodularity and Structural Properties of Stochastic Dynamic Programs

We introduce the concept of multimodularity into the class of stochastic dynamic programs in which state and decision variables are economic substitutes. We discuss its properties and its relationships with supermodularity, convexity, and L#-convexity in real space. We show that multimodularity is preserved under minimization and multimodularity leads to monotone optimal policies with bounded sensitivity. Several examples from inventory management are used to illustrate its applications in stochastic dynamic programs.

Professor Qing LI

Associate Professor
Hong Kong University of Science and Technology

Prof Li is an Associate Professor at the HKUST Business School. His current research focuses on a) stochastic and dynamic inventory problems, especially those involving large state space; b) intertemporal choice when decision makers are inconsistent over time. He received his degrees from University of British Columbia, Fudan, and Tsinghua.

Date: **16 May 2012 (Wednesday)**

Time: **10:30 am – 12:00 noon**

Venue: **SEK107, 1/F, Simon & Eleanor Bldg.**

Language: **English**

*** All are Welcome ***