Title: Two topics on the stochastic programming and their applications

Abstract: We will talk about two increasingly important topics on the stochastic programming, the chance constrained optimization and the sample size reduction method along with their applications. We will focus mostly on methodological advances and computational performances. The chance constrained optimization is solved by an approximation scheme based on Bernstein polynomial and the sample size reduction is developed by the maximum volume inscribe ellipsoid to the polyhedron. Their applications are ranging from air traffic control, supply chain management, inventory control, and many other industries.