概率论系列报告

报告题目(Title)：From infinite urn schemes to decompositions of self-similar Gaussian processes

报告人(Speaker)： 王一早 博士 University of Cincinnati

时间(Time)： 6 月 6 日(周一)下午 3：00-4：00

地点(Venue)：北京大学理科一号楼 1303

摘要(Abstract)：We investigate a special case of infinite urn schemes first considered by Karlin (1967), and especially its occupancy and odd-occupancy processes. We first propose a natural randomization of these two processes and their decompositions. We then establish functional central limit theorems, showing that each randomized process and its components converge jointly to a decomposition of certain self-similar Gaussian process. In particular, the randomized occupancy process and its components converge jointly to the decomposition of a time-changed Brownian motion $\mathbb B(t^\\alpha), \alpha\in(0,1)$, and the randomized odd-occupancy process and its components converge jointly to a decomposition of fractional Brownian motion with Hurst index $H\in(0,1/2)$. The decomposition in the latter case is a special case of the decompositions of bi-fractional Brownian motions recently investigated by Lei and Nualart (2009). The randomized odd-occupancy process can also be viewed as a correlated random walk that scales to a fractional Brownian motion.

Joint work with Olivier Durieu (Université de Tours, France).

欢迎参加