SPEAKER: Sourav Chatterjee

TITLE: Central limit theorem for random multiplicative functions

ABSTRACT: Multiplicative functions are ubiquitous in number theory. It is often important to understand the behavior of partial sums of such functions. A guiding principle that has emerged is that the partial sums of specific multiplicative functions (e.g. Dirichlet characters or the Mobius function) behave like partial sums of random multiplicative functions. This raises the question of the distribution of partial sums of random multiplicative functions, and even this model problem appears difficult to resolve because classical probabilistic techniques do not seem to work. In this talk I will present some recent advances in probability theory which makes it possible to prove such central limit theorems. This is joint work with Kannan Soundararajan.