Theoretical Statistics and Mathematics Unit

Monday Colloquium

Date:June 06, 2016 Time:04:15 PM

Venue:L-Infinity, Stat-Math Unit (5th Floor, A.N. Kolmogorov Bhavan)

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Extremes of Multi-type Branching Random Walks: Heaviest Tail Wins

Abstract

Bhattacharya et al.(2015) considered a branching random walk with heavy tailed increments, that is, they analysed supercritical (rooted) Galton-Watson tree and attach an independent copy of a heavy tailed weights along the edges. To each vertex, they attached the sum of these weights (called positions) along the path from vertex to the root. They derived the weak convergence of the point process associated to the appropriately scaled position variables. In this talk, we shall generalize the above results to the case of dependent weights and to a multi-type branching process satisfying generalized Kesten-Stigum condition. We will show that limiting process is a randomly scaled scale-decorated Poisson point process (SScDPPP) which is a specific Cox cluster process. As a consequence, we can recover the convergence of order statistics of these displacements. This talk is based on a joint work with Krishanu Maulik, Zbigniew Palmowski and Parthanil Roy.

All are cordially invited