Department of Mathematics,
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Math 288 - Probability Seminar

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Diffusions on the space of interval partitions with Poisson-Dirichlet stationary distributions

Abstract:

We construct a pair of related diffusions on a space of partitions of the unit interval whose stationary distributions are the complements of the zero sets of Brownian motion and Brownian bridge respectively. Our methods can be extended to construct a class of partition-valued diffusions obtained by decorating the jumps of a spectrally positive Levy process with independent squared Bessel excursions. The processes of ranked interval lengths of our partition-valued diffusions are members of a two parameter family of infinitely many neutral allele diffusion models introduced by Ethier and Kurtz (1981) and Petrov (2009). Our construction is a step towards describing a diffusion on the space of real trees, stationary with respect to the law of the Brownian CRT, whose existence has been conjectured by Aldous. Based on joint work with N. Forman, S. Pal, and M. Winkel.

Host: Bruce Driver

Thursday, February 23, 2017
10:00 AM
AP&M 6402

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