

STANFORD PROBABILITY SEMINAR

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Monday, 16 May 2004

3pm (Refreshments at 4pm in the 1st Floor Lounge)

Sequoia Hall, Room 200

Poisson process partition calculus and some applications

Abstract. In this talk we describe a Poisson Process Partition Calculus and how it can be applied to some specific problems. The calculus is designed such that one does not need substantial expertise in random measures and combinatorics. We give two concrete applications of this calculus. The first is to show how easily one can establish a Markov-Krein-type identity for linear functionals of a random probability measure defined by normalizing a positive Levy measure. This is a generalization of results developed for mean functionals of Dirichlet processes. Our second application is to neutral-to-the-right processes, where we describe various features of the induced exchangeable marginal distribution which is related to recent work on regenerative compositions. Neutral-to-the-right processes are shown to be related to exponential functionals of Levy processes, an area of intense recent activity in financial mathematics.