

COLLOQUIUM

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A Stochastic Coupling Technique in the Study of SLE

Tuesday, December 7, 2010

A405 Wells Hall

10:20 a.m. - 11:10 a.m.

Refreshments: 10:00 a.m.

Abstract

Schramm-Loewner evolution (SLE) describes a single random curve growing in a plane domain. A number of critical two-dimensional lattice models have SLE as their scaling limits. In this talk, I will explain a probability tool called a stochastic coupling technique, which is used to grow two SLE curves simultaneously in a single domain, so that the two curves commute with each other. I will also explain the application of this technique in proving the following problems: 1. Reversibility of chordal SLE for $\kappa \leq 4$; 2. Duality of SLE; 3. Reversibility of whole-plane SLE for $\kappa \leq 4$; and 4. SLE_2 could be obtained by erasing loops on a planar Brownian motion.

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