

abstract

MATHEMATICAL PHYSICS SEMINAR

Topic:

Speaker:

Affiliation:

Date:

Time/Room:

We show that a random simple curve in a planar n -connected domain that is conformally invariant and satisfies a Markovian-type property, can be described by a diffusion on a moduli space of dimension $3n-2$. Under a natural symmetry condition, satisfied for example by the boundaries of clusters in critical percolation or by loop-erased random walk, the diffusion is determined up to a single real parameter.

The resulting one-parameter family of random simple curves (or, more generally, random growing compacts) is called SLE. We discuss the "radial" case, where the random curve grows from a boundary component to a point in the interior of the domain. We show that for well chosen values of the parameter the random simple curve has special properties. It satisfies locality, a property known from percolation, when the parameter is 6, and the restriction property, known from the self-avoiding random walk, when the parameter is $8/3$.