

Anton Thalmaier: Brownian motion on Jordan curves and stochastic analysis on the diffeomorphism group of the circle.

Abstract: We start with differential geometry of the diffeomorphism group of the circle and explain how Brownian motion on the space of Jordan curves is constructed by solving a “welding” problem of “sewing” together conformally the interior and exterior of the unit circle, glued on the unit circle by diffeomorphisms of the circle. Using Kirillov’s point of view, our approach leads to stochastic analysis on the space of univalent functions on the complex disk. This is joint work with H. Airault and P. Malliavin and part of a project to construct unitarizing measures for representations of the Virasoro algebra.