Einladung zum
Oberseminar Stochastik

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zum Thema

Markov property and conditional rigidity of 3D Ising interfaces

Abstract

Dobrushin famously showed that the interface of a 3D Ising model with plus boundary conditions in the upper half-space and minus boundary conditions in the lower half-space is rigid at low temperatures, i.e., its height oscillations are O(1) with exponential tails. Most analysis of simpler models of random surfaces (e.g., solid-on-solid, Gaussian free field) crucially rely on a Markov property: the law of the surface inside a height-h level curve is independent of the height profile outside the level curve. However, such a Markov property does not hold for the Ising interface. In joint work with Lubetzky, we established an approximate form of the Markov property, from which one can e.g., deduce that inside a height h-level curve, the interface is rigid about height-h, and the asymptotics of its recentered maximum do not depend on the height profile outside the level curve. In this talk we will first recall Dobrushin's proof of rigidity, then introduce a new framework for establishing conditional rigidity estimates, and explore its potential applications.

Alle Interessenten sind herzlich eingeladen.

Die Dozenten der Stochastik