



Einladung
zum
Oberseminar Stochastik

am Mittwoch, dem **13. Dezember 2017**, um **16 Uhr** im **Seminarraum 3**
des Mathematischen Instituts (Raum 314), Weyertal 86-90, 50931 Köln

Es spricht

Prof. Dr. Rongfeng Sun
(National University of Singapore)

zum Thema

Scaling limit of the directed polymer on \mathbb{Z}^{2+1} in the critical window.

The directed polymer model on \mathbb{Z}^{d+1} is the Gibbs transform of a directed random walk on \mathbb{Z}^{d+1} in an i.i.d. random potential (disorder). It is known that the model undergoes a phase transition as the disorder strength varies, and disorder is relevant in $d = 1$ and 2 the sense that the presence of disorder, however weak, alters the qualitative behavior of the underlying random walk, with $d = 2$ being the marginal case. For $d = 1$, Alberts-Khanin-Quastel have shown that if the disorder strength tends to zero as $a^{1/4}$ the lattice spacing a tends to zero, then the partition functions converge to the solution of the Stochastic Heat Equation. We show that in the marginal dimension $d = 2$, the partition functions admit non-trivial limits if the disorder strength scales as $\frac{b}{\sqrt{\log(1/a)}}$, with a transition at a critical point b_c . I will also discuss ongoing work in understanding the limit of the partition functions at b_c . Based on joint work with F. Caravenna and N. Zygouras.

Alle Interessenten sind herzlich eingeladen.

Die Dozenten der Stochastik