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FAKULTÄT
FÜR MATHEMATIK, INFORMATIK
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Fachbereich Mathematik

# Kolloquium über Mathematische Statistik und Stochastische Prozesse

# Prof. D. Yogeshwaran

Indian Statistical Institute, Bangalore, India

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## Spin systems on spatial random graphs

**Abstract:**
We will discuss central limit theorem for spin systems on spatial random graphs. The spin systems satisfy averaged weak mixing, a weak form of asymptotic decorrelation adapted to random graphs. The random graphs are constructed on weakly mixing point processes such as Poisson or Ginibre processes. As illustrative examples, we shall consider the hard-core model and Widom-Rowlinson model on k-nearest neighbour graphs or the Gilbert graph. Weak mixing in these spin systems hold for low-activity parameters and using this, we establish `Lipschitz-localization' of spins on the point process. We deduce a central limit theorem from such a localization criteria. This is joint work with Bartek Blaszczyszyn and Joseph Yukich.

**Prof. D. Yogeshwaran**
d.yogesh@isibang.ac.in
https://sites.google.com/site/yogeshwaranacademics/

*Kontakt:*
*Prof. Dr. Chinmoy Bhattacharjee*
chinmoy.bhattacharjee@uni-hamburg.de
https://sites.google.com/view/chinmoybht/home