



## Einladung zum Oberseminar Stochastik

**Am Mittwoch, 18.12.2024 um 17:45 Uhr, im Seminarraum 1 (Raum 005)**

der Abteilung Mathematik, Weyertal 86–90, 50931 Köln, spricht:

**Prof. Dr. Hanna Döring**  
(Universität Osnabrück)

zum Thema

### **Crossing Number of Projected Random Geometric Graphs and Coverage by Poisson Cylinder Sets**

Abstract

To compare the crossing number of real world networks with the projection of a random geometric graph on a plan, we apply the Mallivin-Stein method and prove a central limit theorem together with a rate of convergence in the thermodynamic regime. In the sparse regime, we show that the crossings in the projections converge to a Poisson point process. In the second part of this talk, we study cylinder sets defined by a Poisson point process as centers of balls of radii  $R$  and a direction. We prove a law of large numbers for the coverage radius, namely for the minimal radius of the cylinders needed to cover the unit cube.

This is joint work with Lianne de Jonge and Xiaochuan Yang.

Interessenten sind herzlich eingeladen.

Die Dozenten der Stochastik