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Einladung zum Vortrag

28. November 2014

von

Prof. Dr. Günter Last
Karlsruhe Institute of Technology

On the second order Poincare inequality and Stein's method for functionals of Poisson processes

We start with a short survey of some recent progress in the stochastic analysis on general Poisson spaces. In particular we will discuss a Mehler-type formula for the Ornstein-Uhlenbeck semigroup and the inverse of its generator. We will then combine these tools with seminal results by Peccati, Sole, Taqqu and Utzet (2010) on the normal approximation of Poisson functionals obtained by a combination of Stein's method and Malliavin calculus. In this way we obtain Berry-Esseen bounds involving only the first two difference operators of the functional. Chatterjee (2009) was the first who established such a second order Poincare inequality in a Gaussian setting. If time permits we will provide two examples from stochastic geometry (Poisson-Voronoi tessellation and nearest neighbour graph), where our rates are optimal.

The talk is based on joint work with Giovanni Peccati and Matthias Schulte.

Termin: **Mittwoch, 17. Dezember 2014, 10:00 Uhr**

Ort: **Universität Ulm, Helmholtzstr. 18, Raum 2.20**

Der Vortrag findet im Rahmen des Mathematischen Kolloquiums der Universität Ulm statt.
Alle Interessenten sind herzlich eingeladen.

gez. V. Schmidt