

Oberseminar Stochastik

Am **Dienstag, 2. Juli 2019**, wird

Herr Christian Mönch (TU Darmstadt)

einen Vortrag halten mit dem Titel:

“Universality of persistence exponents for self-similar processes with stationary increments”

Abstract:

In 1999, G. Molchan showed that, for a centered fractional Brownian motion X on the real line with running maximum process M , $\text{Prob}[M(T) < 1] = T^{-(H-1+o(1))}$, where $0 < H < 1$ is the index of self-similarity of X . Furthermore, he showed that the same tail exponent occurs for several path functionals of X other than the maximum and conjectured that this power law decay also holds for $\text{Prob}[L(T) < 1]$, where L is the local time at 0 of X . However, his method only enabled him to provide a lower bound. In this talk, I discuss an entirely novel approach to persistence problems for self-similar processes with stationary increments based on Palm theory. The technique is not limited to Gaussian processes, allows us to resolve Molchan's conjecture for ANY H -self-similar process with stationary increments that admits a sufficiently regular local time and provides a better error estimate even for the known lower bound of $\text{Prob}[L(T) < 1]$ in the fractional Brownian case. Furthermore, we recover, in the more general setting, the tail asymptotics of $\text{Prob}[M(T) < 1]$ and some of the other path functionals originally considered in Molchan's work, by combining the new approach with recent results by F. Aurzada, N. Guillin-Plantard and F. Pène.

Zeit: Dienstag, 2. Juli 2019, 14 Uhr c.t.

Ort: Raum 05-136, Institut für Mathematik, Staudingerweg 9, 55128 Mainz

Alle Interessierten sind herzlich eingeladen!

gez. Lisa Hartung