



Institut für Mathematik

# Seminar zur Stochastik

Donnerstag, 30. November 2023  
16 Uhr s.t.  
SR 122 Carl-Zeiss-Str. 3

**Dr. Elena Boguslavskaya**  
(Brunel University London)

## “Fractional Wiener Chaos”

**Abstract:** In this talk, we introduce a fractional extension of the Hermite polynomial, utilising the Appell Integral Transform introduced in my other work, and demonstrate its utility in stochastic analysis, paralleling that of the Hermite polynomial. Specifically, when applied to the Wiener process, this new function exhibits martingale properties, self-similarity, and is applicable in fractional Wiener Chaos expansion. The latter leads to the potential definition of a fractional analogue of the Malliavin derivative and paves the way to solve fractional stochastic differential equations. The talk is based on the joint paper with Elina Shishkina.

**Alle Interessierte sind herzlich eingeladen**