

# Master Thesis Project/Masterarbeit

## (Applied Mathematics)

Supervisor: Prof. Dr. Ch. Schwab (SAM, D-MATH)

## Besov Path Regularity of Feller-Lévy Processes

**Field.** Analysis, Interpolation Spaces, Stochastic Processes, Adaptive Approximation.

**Programming (optional).** MATLAB Programming.

**Problem.** The goal of this project is to give an overview over results on Besov path regularity of Lévy processes in terms of their Blumenthal-Gettoor indices. An (optional) algorithmic component of this thesis could address algorithms based on nonlinear approximation in path simulation.

**Issues.** The goal is to show that, contrary to diffusion processes, Lévy and the more general Feller-Lévy processes admit rather high path regularity in Besov spaces with summability index  $p \in (0, 1)$  which is only constrained by the Blumenthal-Gettoor index of the Lévy process.

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