

# Besov Regularity and Approximation of a Certain Class of Random Functions

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We discuss a stochastic model which yields a class of random functions  $X$  on a bounded domain  $\mathcal{O} \subset \mathbb{R}^d$  in terms of wavelet expansions. We use these processes because they permit explicit control of their Besov regularity.

In this talk we present error bounds for linear and non-linear approximation of  $X$  in the  $L_2$ - and in the  $H^s$ -norm as well as an efficient way of simulation.

As an outlook we consider  $X$  to be the right hand side of an elliptic boundary value problem and present error bounds for best  $N$ -term approximation of the solution  $U$ .

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