

Seminar 2024

Math

Numerical Methods for Partial Differential Equations with Random Coefficients

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Abstract: Mathematical models often contain uncertainty in parameters and measurements. In this talk we focus on partial differential equations where some parameters are modelled by random variables. The main example comes for the diffusion equation where the diffusion parameters is modelled as a random field which randomly fluctuates around a given mean. To sample the random fluctuations we use quasi-Monte Carlo methods. We provide an elementary introduction to PDEs using the diffusion equation with random coefficients and discuss some of the newer methods towards the end.



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