Institute of Geonics, Czech Academy of Sciences
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INVITATION TO THE LECTURE

JUNE 2, 2022 | 9:30 | CONFERENCE ROOM

INTRODUCTION TO THE STOCHASTIC GALERKIN METHOD

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We introduce the Stochastic Galerkin method as an extension of the classical deterministic Galerkin method. For the demonstration, we pick a simple elliptic problem (stationary Darcy flow problem). We focus on the general use of the Stochastic Galerkin solution and its differences to more standard non-intrusive methods, e.g. MC or collocation methods. We briefly discuss well-posedness, different types of uncertainties, discretization spaces, separable form, efficient assembly of matrices, preconditioners and methods for solving the resulting system.