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Stochastic Galerkin method

Abstract

Solving differential equations with parameters we study how the solutions depend on the parameters. We can use many approximation methods, such as Monte Carlo, collocation or projection methods. In this talk we focus on the stochastic Galerkin method. We present some components of usual settings: approximation spaces, Karhunen-Loeve expansion of coefficients of the equation, and structures of resulting system matrices. We also show some preconditioning methods.