
Sarah Osborn
**A Multilevel Solution Strategy for the Stochastic Galerkin
Method for PDEs with Random Input Data**

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We discuss solving partial differential equations (PDEs) with random input data using the stochastic Galerkin method. This method can often be computationally demanding as the method suffers from the *curse of dimensionality* where the computational effort increases greatly as the stochastic dimension increases. We consider a multilevel solution strategy for the stochastic Galerkin method that employs hierarchies of spatial and stochastic approximations in an attempt to diminish some of the computational burden. Analysis of the proposed multilevel method and numerical results are presented that compare the multilevel approach to the traditional, single-level stochastic Galerkin method.