

Aretha Teckentrup

University of Warwick, United Kingdom
arethat24@gmail.com

By employing a hierarchy of both spatial approximations and interpolation operators in stochastic parameter space, we develop a multilevel version of stochastic collocation methods for random partial differential equations, leading to a significant reduction in computational cost. We provide a convergence and cost analysis of the new algorithm, and demonstrate the gains possible on a typical random diffusion model problem.

Joint work with Max Gunzburger (Florida State University, USA), Peter Jantsch (University of Tennessee, USA) and Clayton Webster (Oak Ridge National Laboratory, USA).