



QMC Opening Workshop August 28-September 1, 2017

Lecture: *Application of QMC to PDEs with Random Coefficients -- a survey of analysis and implementation*

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Abstract:

In this tutorial I will provide a survey of recent research efforts on the application of QMC methods to PDEs with random coefficients. Such PDE problems occur in the area of uncertainty quantification. A prime example is the flow of water through a disordered porous medium. There is a huge body of literature on this topic using a variety of methods. QMC methods are relatively new to this application area. The aim of this tutorial is to provide an entry point for QMC experts wanting to start research in this direction, for PDE analysts and practitioners wanting to tap into contemporary QMC theory and methods, and for anyone else who sees how to cross-fertilize the ideas to other application areas.