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SEMINAR OF NUMERICAL ANALYSIS

➢ **WEDNESDAY 14 OCTOBER 2015 - ROOM MA A1 10 - 16h15**

Prof. Dongbin XIU, (University of Utah, USA) will present a seminar entitled:

"UNCERTAINTY QUANTIFICATION ALGORITHMS FOR LARGE-SCALE SYSTEMS"

Abstract:

The field of uncertainty quantification (UQ) has received an increasing amount of attention recently. Extensive research efforts have been devoted to it and many novel numerical techniques have been developed. These techniques aim to conduct stochastic simulations for very large-scale complex systems. Although remarkable progresses have been made, UQ simulations remains challenging due to their exceedingly high simulation cost for problems at extreme scales.

In this talk I will discuss some of the recent developed UQ algorithms that are particularly suitable for extreme-scale simulations. These methods are (1) collocation-based, such that they can be directly applied to systems with legacy simulation codes; and (2) capacity-based, such that they deliver the (near) optimal simulation accuracy based on the available simulation capacity. In another word, these methods deliver the best UQ simulation results based on any given computational resource one can afford, which is often very limited at the extreme scales.

Lausanne, 18 September 2015/JH/cr

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The MATHICSE seminars are announced at http://mathicse.epfl.ch/seminars