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Statistical analysis of simulation experiments: Challenges for industrial applications

Tuesday, 14 September 2021 14:30 (30 minutes)

This talk will concern developing and disseminating statistical tools for answering some industrial issues. It will be fully based on my 20-years' experience as a statistician research engineer and expert in the French research institute of nuclear energy (CEA) and the French company of electricity (EDF). I will particularly focus on the domain of uncertainty quantification in numerical simulation and computer experiments modeling. For my company, in a small-size data context (that occur in the frequent cases of expensive experiments and/or limited available information), the numerical model exploration techniques allow to better understand a risky situation and, sometimes, to solve a safety issue. I will highlight some successful projects (always collective), emphasizing on the scientific innovative parts (kriging metamodeling and global sensitivity analysis in high dimension) but also the organizational reasons of the success.

Keywords

Uncertainty quantification, Computer experiments, sensitivity analysis

Special/invited session

Primary author: IOOSS, Bertrand

Presenter: IOOSS, Bertrand

Session Classification: Best Manager Award (Bertrand Iooss) and Young Statistician Award (Inez Zwetsloot)

Track Classification: Other/special session/invited session