

Surrogate models for stochastic simulators: an overview and a focus on generalized lambda models

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Stochastic simulators are commonly used in engineering, mathematical finance or epidemiology to model systems in which some intrinsic source of stochasticity exists on top of well-identified system parameters. As a consequence, for a given vector of input parameters, the response of the simulator is a random variable to be characterized.

In this talk we present an overview of the recent literature devoted to building surrogate models of such simulators, which we call *stochastic emulators*. In a second part we focus on a recent approach proposed by [1] that is based on generalized lambda distribution and polynomial chaos expansions. The approach can be used without the need of replicated simulations, which brings efficiency and versatility [2]. Applications to sensitivity analysis are finally presented [3].

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References

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