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An introduction to Uncertainty Quantification: Bayesian inference, rare event estimation and dimension reduction

vendredi 27 octobre 2023 08:45 (1h 30m)

In the first part of this lecture, we will introduce the basics of uncertainty quantification (UQ) for complex and multi-dimensional models. Our emphasis will be on addressing Bayesian inverse problems and rare events estimation. In the second part, we will demonstrate how employing gradient-based dimension reduction techniques allows for the effective identification of pertinent subspaces in both the model's input and output. We will illustrate how this approach can be applied for the (quasi)optimal placement of sensors, but also for the efficient transport-based solution to Bayesian inference problems.

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