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# Single and Multiobjective Bayesian Optimization in the presence of uncertainties

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## Résumé

The use of numerical models is widespread nowadays to study physical phenomena, as they can be used for parameter/state estimation, or to take some decision by defining a cost function. In the modelling process, uncertainties are introduced to account for uncontrollable external effects, making the quantities of interest statistical estimates. Due to the expensive cost of simulations, the total number of model runs is often limited. This motivates the use of surrogates which help reduce the computational cost, and can be used to choose the next point to evaluate.

In this presentation, we will go over the principles of Bayesian Optimization for single and multi objective problems, possibly constrained, and how it can be adapted when uncertainties are introduced in the modelling.

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