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Adaptive Design of Experiments Based on Gaussian Processes

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Abstract

We consider a problem of adaptive design of experiments for Gaussian process regression. We introduce a Bayesian framework, which provides theoretical justification for some well-know heuristic criteria from the literature and also gives an opportunity to derive some new criteria. We also perform testing of methods in question on a big set of multidimensional functions.

Keywords

Active learning – Computer experiments – Sequential design – Gaussian processes