

# REPORT

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### 1. MULTI-FIDELITY REGRESSION.

The objective is to build a learning algorithm that takes into account several comparable sets of responses with different degrees of fidelity, produced by an experiment. For example, consider solving a differential equation by Euler's method with a constant discretization step  $h$ . For each  $h$  we choose we obtain a set responses. For a small  $h$  the responses are better but harder to compute. What is the best way to use all the sets in order to produce the best result possible? How many sets should be used?

Some reference papers are [KO00], [QW08] and [LG11].

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