

Sensor selection for hyper-parameterized linear Bayesian inverse problems

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Mathematical models of physical processes often depend on parameters, such as material properties or source terms, that are known only with some uncertainty. Measurement data can help estimate these parameters and thereby improve the meaningfulness of the model. As experiments can be costly, it is important to choose sensor positions carefully to obtain informative data on the unknown parameter. In this poster we consider an observability coefficient that characterizes the sensitivity of measurements to parameter changes, and show its connection to optimal experimental design criteria. We then show how the observability coefficient can be used for sensor selection.

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