How to Quantify Model Error

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Abstract

To solve an inverse problem, we need to set up some numerical models. It is always the case that relatively ideal methimetical models would lead to nice reconstructions but high computational cost, while easily implementable models would lead to fast reconstructions but poor accuracy. In this project, we try to figure out how much influence would the model error introduced by applying numerically implementable model cause, and how to reduce the influence. By analysing the model error from a Bayesian prospective, we give illustration under UQ framework.