Towards Uncertainty Quantification in 21st Century Sea-Level Rise Predictions: Efficient Methods for Bayesian Calibration and Forward Propagation of Uncertainty for Land-Ice Models

Abstract. This talk will present the evolution of our approach for quantifying uncertainty in anticipated sea-level rise due to melting of the polar ice-sheets. Specifically we will discuss approaches for propagating an uncertain spatially distributed basal friction through a transient ice-sheet model. The run time and high-dimensionality of the transient model pose numerous challenges to most UQ methods. In this talk we will present an initial study that highlights these challenges and discuss avenues for improvement.

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