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Bayesian assessment of uncertainty in viscosity closure models for turbidity currents computations

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- Turbidity currents are responsible for carrying sediments leading to the formation oil reservoirs.
- Modeling offers new insights to geologists to understand the deposition mechanisms and the final reservoir form.
- We specifically study the model discrepancy induced by employing rheological laws describing the effective mixture viscosity.
- We propose a probabilistic formulation encompassing model discrepancy stochastic characterization, a hierarchical Bayesian formulation, and the corresponding numerical scheme to calibrate the model parameters.
- We analyze the efficacy of the proposed approach in a setup typically found in physical experiments.

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