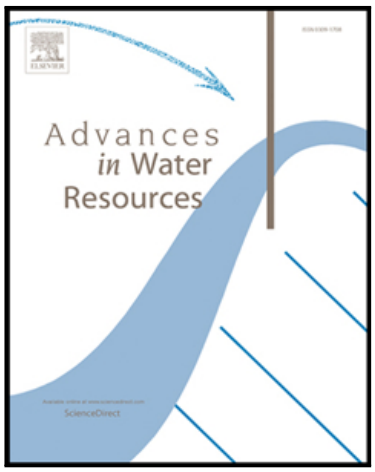


# Calibrating Lattice Boltzmann Flow Simulations and Estimating Uncertainty in the Permeability of Complex Porous Media

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**Highlights**

- We use a Bayesian uncertainty quantification framework to calibrate the BGK Lattice Boltzmann model.
- We propagate the measured uncertainty to permeability predictions.
- The calibration uses porosity and permeability data for Fontainebleau sandstone.
- We showcase that previous calibrations based on Poiseuille flow lead to less accurate predictions.