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Pore-scale investigation of mixing-induced calcite precipitation and dissolution kinetics in micromodel experiments

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Pore-scale experiments on transverse-mixing induced calcite reactions in a micromodel are being used as a basis for understanding coupled reactive transport systems perturbed by geological CO2 injection. Pore-scaling modeling captures governing physics of crystal morphology and growth patterns very well and pore-scale observations in the micromodel are well linked to nano-scale observations in the literature. Progress on novel methods for upscaling reaction rates from nano-scale observations and hybrid pore-continuum scale model are discussed.
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