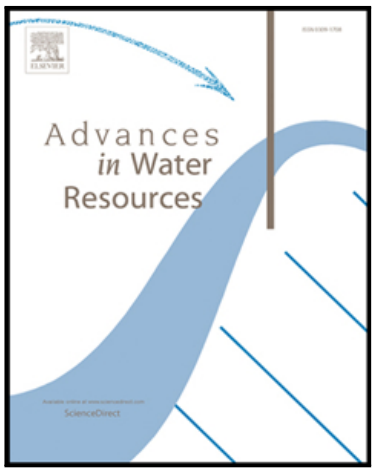

Reservoir Simulation with the Cubic Plus (Cross-) Association Equation of State for Water, CO_2, Hydrocarbons, and Tracers

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Highlights

- Cubic-plus-association equation-of-state accurately predicts phase behavior of water, hydrocarbons, and CO2 mixtures
- Non-linearity of EOS complicates three-phase phase stability and phase-split computations
- Algorithms are proposed to achieve comparable computational efficiency to cubic EOS
- Applications consider carbon sequestration, methane leakage into groundwater, and enhanced oil recovery
- Robust and efficient simulator improves predictive capabilities for multicomponent multiphase flow of water, gas, and oil