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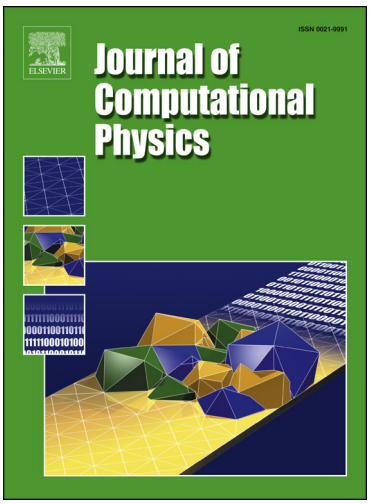

Sequential fully implicit formulation for compositional simulation using natural variables

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Highlights

- Generalization for compositional flow of existing pressure equations for immiscible and for black-oil formulations.
- Importance of working with the nonlinear pressure equation (weighted combination of nonlinear algebraic residuals) as opposed to the standard IMPES-type pressure equation (combination of linearized equations performed at the Jacobian level).
- Identification of two types of splitting error with the findings that the errors in the saturation are local and the errors in the total velocity have large support across the invaded regions.