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An Accelerated Fixed-Point Iteration for Solution of Variably Saturated Flow

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We investigate effectiveness of an acceleration method applied to the modified Picard iteration for simulations of variably saturated flow. We solve nonlinear systems using both unaccelerated and accelerated modified Picard iteration as well as the Newton method. Since Picard iterations can be slow to converge, the advantage of acceleration is to provide faster convergence while maintaining advantages of the Picard method over the Newton method. Results indicate the accelerated method provides a robust solver with significant potential computational advantages.