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Nonlinear multigrid methods for solving Richards' equation in two space dimensions

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ABSTRACT.

We propose in this paper a nonlinear multigrid algorithm of Full Approximation Storage (MG-FAS) for efficient numerical solution of two dimensional Richards' equation modelling water infiltration into an isotropic, homogeneous, unsaturated porous medium. Comparisons with the nonlinear Alternating Line Gauss-Seidel iterations (ALGS) ilustrate the much better behaviour of our solver.

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