

Numerical study convex regularizations of Darcy law in the case of Rayleigh-Taylor instability

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We study problems of filtration of two immiscible liquids. We construct numerical algorithms to solve regularization for the Muskat problem and a problem of filtration of a stratified fluid with the Rayleigh-Taylor instability. Our numerical algorithms satisfy to the conservation laws. We present the results of numerical simulation of problems understudy.