

Numerical modeling of two-phase filtration in heterogeneous and fractured porous media

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Аннотация

In this work, we are considering two-phase flow in porous, strongly heterogeneous media [1, 2]. Mathematical model without gravitational forces is given. Also, we are considering double porosity models for fractured porous media [3, 4]. Numerical realization for pressure and for saturation is done using finite element method . We are stabilizing saturation with additional artificial diffusion [5]. We are using mixed finite element method for computing pressure and velocity equations. Numerical results for model two-dimensional problem are given. This work is done with support by the Russian Foundation for Basic Research (grant №17-01-00732a) and by mega-grant of the Government of Russian Federation (grant №14.Y26.31.0013).

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