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ON NONLINEAR WAVE DYNAMICS IN SATURATED POROUS MEDIA WITH COMPLEX RHEOLOGIES

Abstract

The nonlinear evolution equation describing the processes of nonlinear waves propagation in two-phase continuums is derived. At that passing on to moving coordinates with scalable time and spaces the wave evolution from perturbation source is investigated. At the first approximation it is obtained the dispersion equation for the velocity of stationary travelling linear waves, at the second approximation the nonlinear evolution equation whose measure of nonlinearity effects strongly depends on rate of wave dispersion, energy dissipation, rheology of solid particles and forces of interfacial interaction.