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MODELING THE DYNAMICS OF FLUID MOVEMENT IN A PIPE TAKING INTO ACCOUNT MASS TRANSFER

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Abstract. A model of non-stationary fluid motion in the reservoir-pipe system is constructed taking into account mass transfer, reservoir deformation, and solutions to boundary value problems are given. Analytical formulas are obtained that allow determining the pressure field and mass flow rate of fluid depending on the system parameters taking into account mass transfer. The Laplace transform method was used in numerical modeling for practical values of the system parameters. Numerical calculations are performed for practical values of the system parameters.

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