

# **MATHEMATICAL MODELING OF HYDRODYNAMIC PROCESSES IN A PIPELINE PARTIALLY FILLED WITH AIR**

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The papers present the procedure of calculating hydrodynamic parameters for liquid column motion in a plastic pipeline partially filled with air and connected up to a tank with an air cavity over the liquid. The liquid starts moving at the moment the electropneumatic gate is opened. End the motion depends on the pressure in the tank, pipeline parameters and the number of bends in the pipeline. Hydrodynamic parameters are calculated on the basis of solving non – linear integral and differential equations by the finite difference method. The results of calculation make it possible to define the liquid velocity, the forces of liquid reaction in pipeline bends and to analyse the influence of the factors affecting them.