Two-dimensional calculations of stratified turbulent flow in a pipe

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Abstract: In this paper, we consider the stratified turbulent flow of a two-phase medium in inclined pipes. Based on the new turbulence model [1], a program code for calculating two-dimensional flows for the study of two-phase stratified flows in pipes was developed, including taking into account the rough of the pipeline wall. The technique for calculating two-phase flows in extended pipelines is described. The problem of stationary stratified two-phase flow in a pipe of constant cross section in the case of turbulent regime is numerically solved. Calculations of the resistance of a rough pipe are carried out and the results on the influence of roughness on pipe resistance and velocity distribution are presented.

Keywords: stratified turbulent flow, resistance, two-dimensional calculations, rough surface

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References

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