

# Modeling of unsteady flow of viscous fluid in the channel of complex geometry

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## Abstract

© Published under licence by IOP Publishing Ltd. The article concerns an issue of exploring the mechanism of wave influence on the process of filtration. To describe a filtration flow, the porous medium is represented as a capillary, the radius of which varies sinusoidally. In this article we are presenting the results of numerical modeling of pulsating liquid flow in a sinusoidally-shaped channel. Numerical research was conducted with the help of the program complex FlowVision. As a result of series of calculations we received fields of velocities and pressure in the axial section of flowing channel. It was found that it is the flow in narrow isthmuses between the pores that contributes to the pressure difference the most. We revealed the signs of steady-state liquid flow in the channel when imposing fluctuations of pressure in the absence of pressure gradient. The conditions of formation of such flow are revealed.

<http://dx.doi.org/10.1088/1757-899X/158/1/012066>

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