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Unsteady motion of a bubble in a Hele-Shaw cell

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Abstract

© 2016, Pleiades Publishing, Ltd. New exact solutions of an idealized unsteady single-phase Hele-Shaw problem of air-bubble motion in a slot-type channel are constructed under the assumption of bubble symmetry relative to the central axis of the channel. Qualitative features of the interface evolution, which distinguish this case from the earlier considered cases of Hele-Shaw flow with different geometry, are detected.

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Keywords

exact solution, interphase boundary, single-phase Hele-Shaw problem, unsteady bubble motion