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Evolution of the interface in a stratified anisotropic porous material

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Abstract

It is shown that the boundary-value problem describing the evolution of the interface during impregnation of a stratified inhomogeneous anisotropic porous material with a viscous fluid can be reduced to a similar problem for a stratified inhomogeneous isotropic material by nonorthogonal transformation of the coordinates. As a result, the well-known estimates of the problem parameters determining the interface configuration for impregnation of an isotropic material can be extended to the anisotropic case. © 2010 Springer Science+Business Media, Inc.

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Keywords

Bulk anisotropy, Free-boundary problem, Multiphase media