

Mass transfer during filtration in a porous medium with a branching skeleton

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Abstract

The problem on flushing a semispace with a constant flow rate is used as an example to study interaction of active solutions with a porous medium. An exact solution to this problem is obtained, physical applicability conditions are elucidated and appropriate interpretation of the known solutions is given. It is found, that two stages of the mass transfer process exists. Its boundaries are determined using the characteristics of the problem equations. The asymptotic behaviour of exact solution for very small solute concentration is analysed. It is shown, that this case conform to Zeldovitch solution.
