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Oscillatory Modes of Adsorption in the Flow of Multicomponent Systems

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The flow of a multicomponent hydrocarbon system, including n surface-active components, diffusing in the porous space of a medium and simultaneously adsorbing on its surface is considered. Experimental investigations of adsorption phenomena in multicomponent systems show the presence of competing effects, which lead to a mutual influence of the components on the degree of adsorption of each of them. An equation of sorption kinetics, which describes a series of oscillatory modes for certain values of the original parameters, is suggested. The formulated problem was solved numerically by a difference method and using the checkerboard scheme. All the results obtained can be divided into two classes: (1) solutions of the traveling concentration wave type, and (2) solutions corresponding to the various oscillatory processes. Regions of existence of solutions (1) and (2) was found

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