Solution of a linear problem of Florin type with the small parameters for the system of the parabolic equations

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There is studied a linearized two phase free boundary problem of Florin type with the small parameters for the system of the parabolic equations in the Hölder spaces.

The original nonlinear free boundary problem of Florin type describes the process of filtration of liquids and gases in the porous medium.

There are proved the existence, uniqueness of the solution and uniform coercive estimates of the solution with respect to the small parameters in the Hölder spaces.