

“On the variational inequality approach to a fractional Stefan type problem”

ABSTRACT: The classical Stefan problem, after an integral transformation in time, can be formulated as variational inequalities of parabolic type as it is well-known. Replacing in the Fourier law the classical gradient of the temperature by the distributional Riesz fractional s -gradient ($0 < s < 1$) we obtain a one parameter Stefan type problem which can still be solved with evolution variational inequalities. As the parameter s tends to 1 the corresponding variational solutions tend to the variational solution of the classical Stefan problem.