

Is the Kuramoto-Sivashinsky equation valid for 2D free boundary problems?

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I will discuss a Stefan-like free boundary problem, introduced by Frankel in the eighties, which contains a small parameter ϵ such that $\epsilon = 0$ is a threshold for stability. I will show how the KS-equation appears in this context as a solvability condition in a suitable asymptotic expansion and how we try to prove the validity of this expansion and thereby KS. The results will be published in a paper with Brauner and Lorenzi.