

Asymptotic behavior of wave fronts in parameter-dependent Born-Infeld models

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Talk Abstract

We present some recent results for parameter-dependent Born-Infeld reaction-diffusion models. In particular, after providing some estimates of the critical speed, we discuss the behavior of the critical traveling front as the parameters vary. We mainly focus on two results: on the one hand, we show the convergence to the critical front for the linear diffusion equation when the maximal field strength goes to infinity. On the other hand, we highlight a new phenomenon of front sharpening in the limit for vanishing diffusion, which distinguishes the considered diffusion from linear and saturating ones.

Keywords: Born-Infeld models, critical wave fronts, critical speed, vanishing diffusion limit.

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