
Asymptotic spreading for general heterogeneous Fisher-KPP type equations

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Abstract

We will present some recent propagation results obtained with H. Berestycki for the solutions of multidimensional Fisher-KPP reaction-diffusion equations with general space-time heterogeneous coefficients. Namely, we will construct some spreading speeds through new notions of generalized principal eigenvalues and a game theory variational characterization. These estimates turn out to be optimal for almost periodic, asymptotically almost periodic and radially periodic equations or when the coefficients converge in radial segments. This last example may give rise to non-convex expansion sets.

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