

Travelling waves in the Fisher-KPP equation with nonlinear diffusion and a non-Lipschitzian reaction term

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We consider a one-dimensional reaction-diffusion equation of Fisher-Kolmogoroff-Petrovsky-Piscounoff type. We investigate the effect of the interaction between the nonlinear diffusion coefficient and the reaction term on the existence and nonexistence of travelling waves. Our diffusion coefficient is allowed to be degenerate or singular at both equilibrium points, 0 and 1, while the reaction term need not be differentiable. These facts influence the existence and qualitative properties of travelling waves in a substantial way. This is a joint work with Peter Takac.