

Stationary states of reaction-diffusion-advection systems with inhomogeneous diffusion

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We obtain classification, solvability, and nonexistence theorems for positive stationary states of reaction-diffusion-advection systems involving a balance between repulsive and attractive terms. This class of systems contains PDE arising in biological models of Lotka-Volterra type, in physical models of Bose-Einstein condensates, and in models of chemical reactions. We consider general heterogeneous media, and even controlled inhomogeneous diffusions.

References

- [1] A. MONTARU, B. SIRAKOV, *Stationary states of reaction-diffusion and Schrödinger systems with inhomogeneous or controlled diffusion*, SIAM J. Math. Anal. Vol. 48, No. 4, pp. 2561-2587.