

Asymptotic symmetry for a class of non-cooperative reaction-diffusion systems in radial domains

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The talk is devoted to asymptotic symmetry properties of positive global solutions to nonautonomous reaction-diffusion systems in bounded radial domains. We consider systems with competition and Neumann boundary conditions; in this case the available approaches based on the moving plane method do not apply. Moreover, asymptotic radial symmetry cannot be expected in general in this setting, so we will focus on sufficient conditions for asymptotic axial symmetry. It will be shown that, if the initial profiles satisfy a reflection inequality with respect to a hyperplane, then the elements of the ω -limit set of a global positive solution share a common symmetry axis, whereas the components of every such element have reverse angular monotonicity properties. If time permits, the case of Dirichlet boundary conditions will also be discussed briefly.