UNIQUENESS AND COMPLETE DYNAMICS IN THE HETEROGENEOUS COMPETITION-DIFFUSION SYSTEMS

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Abstract
In this paper we study the interactions between diffusion and heterogeneity of the environment in the classical diffusive Lotka-Volterra competition systems. In the weak competition case, we establish the uniqueness, hence the global asymptotic stability, of coexistence steady states under various circumstances, and thereby a complete understanding of the change in dynamics is obtained when one of the inter-specific competition coefficients is small.