

Coexistence states of a parabolic system with local and nonlocal diffusion

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We study a logistic-type competitive parabolic problem involving potentially distinct diffusion strategies governed by the fractional Laplacian and/or the classical Laplacian. Under suitable assumptions on the initial population sizes, we establish the existence of a pair of nontrivial solutions using the monotone iteration method. To complement our analytical results, we present numerical experiments which explore the impact of different diffusion strategies on population dynamics.

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