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Dynamics of a nonlocal dispersal population model with annually synchronized emergence of adults

In this talk, I present some recent results on the spatial dynamics of a nonlocal dispersal species model with annually synchronized emergence of adults. For the case of a bounded domain, we confirm threshold dynamics of the adult population, and provide the exact persistence criterion. For the case when the domain is the 1-D full space, we explore the existence of spreading speed and obtain their computation formula which coincide with the minimal wave speed for the traveling waves. The above results are obtain for both monotone and non-monotone maturation impulse functions. We also present some numerical simulations to demonstrate the theoretical results.