Applied Dynamical Systems Seminar

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3:30-4:30p.m., HH-3017

Competitive Dispersal Strategy in Advective Homogeneous Environment

Abstract:
In this talk, based on a two-species Lotka-Volterra competition-diffusion-advection system, we want to understand which kind of dispersal strategy will help one competitor to gain more competitive advantages and thus exclude the other one.

The topic is divided into three parts: Evolution of diffusion rate; Evolution of advection strength; and Diffusion vs Advection.

Our final conclusions suggest that: 1. If two species only differ in their diffusion rates, then larger diffusion wins; 2. If two species only differ in their advection rates, then smaller advection wins; 3. If two species differ in both their diffusion and advection rates, then the competition outcome may depend on the ratio of advection and diffusion rate.