

# Two-Species Competition with Nonlocal Dispersal

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This talk deals with coexistence and extinction for two-species Volterra-Lotka competition systems with nonlocal dispersal. Sufficient conditions in terms of diffusion, reproduction, self-limitation, and competition rates are presented for existence, uniqueness, and stability of coexistence states as well as for the extinction of one species. Results are obtained for environments with hostile surroundings, which corresponds to the case of Dirichlet boundary conditions for systems with random dispersal, for isolated and periodic environments, which correspond to Neumann and periodic boundary conditions, respectively, in case of random dispersal. Important tools are a comparison principle, sub- and super-solutions, and the principal eigenvalue theory for nonlocal dispersal operators.

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