

Stochastic Population Dynamics in Discrete Time

Alex Hening

Texas A & M

I will present a general theory for coexistence and extinction of ecological communities that are influenced by stochastic temporal environmental fluctuations. The results apply to discrete time stochastic difference equations that can include population structure, eco-environmental feedback or other internal or external factors. I will also explain how the population size at equilibrium is influenced by environmental fluctuations.

In Special Session 33 on Recent Progress in Mathematical Ecology and Epidemiology at the Mathematical Congress of the Americas 2025.