

DALHOUSIE MATHEMATICS COLLOQUIUM

Thursday, December 5, 2019; **2:00–3:00 pm**, Chase 319

Speaker: Chunhua Ou (Memorial University)

Title: Speed of the Traveling Wave for a Bistable Lotka-Volterra Competition Model

Abstract:

In this talk, we present the propagation speed and direction of the bistable traveling wave for a Lotka-Volterra competition model with bistable nonlinearity. A range-estimation of the bistable wave speed is provided by comparing the bistable traveling wave with the monostable ones in the system. Comparison theorems on the speed and direction of wave propagation are first established by the method of upper and lower solutions. Through the construction of novel upper and lower solutions, we obtain some new criteria that explicitly determine the speed sign of the bistable traveling wave. Based on these results, we can predict which species will win in the competition for the same resources.