Applied Dynamical Systems Seminar

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2:00p.m., HH-3017

Bistable Traveling Waves for Monotone Discrete-time Recursive Systems

Abstract:

There have been extensive investigations on monostable traveling waves and spreading speeds for various monotone evolution systems. In this talk, I will introduce the general theory of bistable traveling waves (i.e., connecting two stable equilibria) for monotone discrete-time recursive systems. The developed theory establishes, for the first time, the relation between monostable and bistable systems about their propagation phenomena. A dynamical systems approach to the global stability of such a wave will also be presented. As an application example, I will further discuss an integrodifference equation model of two species competition in spatial ecology. This talk is based on the joint works with Jian Fang and Yuxiang Zhang.