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Mathematical modeling of invasive Asian clam population dynamics

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The Asian clam, Corbicula fluminea (Müller, 1774), is one of the most important non-native aquatic invasive species in freshwater ecosystem, which can be rapidly spread in lakes, canals, streams, and rivers throughout many parts of the world. This species has remarkably distinct mobility pattern in different phases of its life cycle. In this talk, I present a simple mathematical model that describes the basic life cycle of Asian clams and study the invasion speed of Asian clams in an unbounded one-dimensional habitat using a non-local reaction-diffusion-advection system with time delay.

This is joint work with Jian Fang, Jianhong Wu, and Kunquan Lan.

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