

1155-92-288

Keng Deng*, Department of Mathematics, University of Louisiana at Lafayette, Lafayette, LA 70504, and **Qihua Huang**. *A hybrid parabolic and hyperbolic equation model for a population with separate dispersal and stationary stages.*

In this talk, we introduce a hybrid parabolic and hyperbolic equation model, in which a reaction-diffusion equation governs the random movement and settlement of dispersal individuals, while a first-order hyperbolic equation describes the growth of stationary individuals with age structure. We prove the existence and uniqueness of the solution of the model using the monotone method based on a comparison principle. We study the population persistence criteria in terms of three related measures. (Received January 16, 2020)