

1077-92-497

Yuan Lou* (lou@math.ohio-state.edu), Department of Mathematics, Ohio State University, Columbus, OH 43210. *Dispersal in heterogeneous landscape.*

A general question in the study of the evolution of dispersal is what kind of dispersal strategies can convey competitive advantages and thus will evolve. We will mainly focus on a reaction-diffusion-advection model for two competing species, in which the species are assumed to have the same population dynamics but different dispersal strategies. We find a conditional dispersal strategy which results in the ideal free distribution of species, and we investigate whether such dispersal strategy is evolutionarily stable. Discrete and nonlocal dispersal models will also be discussed. The talk is mainly based upon joint works with Isabel Averill, Steve Cantrell, Chris Cosner, Dan Munther and Dan Ryan. (Received September 05, 2011)