

1105-92-331

Frithjof Lutscher and **King-Yeung Lam*** (lam.184@math.osu.edu), 100 Math Tower, 231 W 18th Ave, Columbus, OH 43210, and **Yuan Lou**. *Evolutionarily Stable Dispersal Strategy in Closed Advective Environment*.

We study a two-species competition model of reaction-diffusion-advection type in a closed advective environment, where individuals are exposed to unidirectional flow (advection) but no individuals are lost through the boundary. The two species have the same growth and advection rates but different random dispersal rates. The linear stability analysis of the semi-trivial steady state suggests that, in contrast to the case without advection, slow dispersal is generally selected against in closed advective environments. We investigate the invasion exponent for various types of resource functions, and our analysis suggests that there might exist some intermediate dispersal rate that will be selected. When the diffusion and advection rates are small and comparable, we determine criteria for the existence of singular strategies and evolutionarily stable strategies. We further show that every singular strategy is convergent stable. (Received September 23, 2014)