

1096-92-1372

**Robert Stephen Cantrell** and **Chris Cosner\*** ([gcc@math.miami.edu](mailto:gcc@math.miami.edu)), Department of Mathematics, University of Miami, Coral Gables, FL 33124, and **Yuan Lou** and **Daniel Ryan**.

*Evolutionary stability of ideal free dispersal in spatial population models with nonlocal dispersal.*

An important problem in the study of the evolution of dispersal is determining what kinds of dispersal strategies are evolutionarily stable. A class of strategies that have been shown to be evolutionarily stable in various contexts are those that produce an ideal free distribution of the population, that is, a spatial distribution where no individual can increase its fitness by moving to another location. This talk will present results on the evolutionary stability of ideal free dispersal strategies in the context of continuous time nonlocal dispersal models. These results partially extend some recent work on the evolutionary stability of ideal free dispersal for reaction-advection-diffusion equations and discrete diffusion models to nonlocal dispersal models. They also include an extension of an inequality from matrix theory to the case of nonlocal dispersal operators, which may be of independent interest. (Received September 15, 2013)