962-92-980
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1400 E JWB 233, Salt LAke City, UT 84112, Hans F Weinberger (hfw@math.umn.edu), School of Mathematics, University of Minnesota, 514 Vincent Hall, 206 Church Street S.E., Minneapolis, MN 55455, and Mark A Lewis (mlewis@math.utah.edu), Department of Mathematics, University of Utah, 155 S 1400 E JWB 233, Salt LAke City, UT 84112. Linear conjecture for spread in cooperative models.

One crucial measure of a species' invasiveness is the rate at which it spreads into a competitor's environment. The so-called "linear conjecture" equates spread rate in the full nonlinear model with spread rate in the system linearized about the leading edge of the invasion. However, recent work by Hosono (1998) has shown that this linear conjecture is not always valid, even for simple Lotka-Volterra competition plus diffusion: spread may occur at rate higher than predicted. We shall present conditions which ensure the linear conjecture is valid for general cooperative systems, as well as applications to two-species competition models. (Received September 29, 2000)