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Wenzhang Huang* (huang@math.uah.edu), 301 Sparkman Dr., Huntsville, AL 35758. *Traveling Wave Solutions for a Class of Predator-Prey Systems.*

We use a shooting method to show the existence of traveling wave fronts and to obtain an explicit expression of the minimum wave speed for a class of predator-prey systems. Our approach is a significant improvement of techniques introduced by Dunbar. The advantage of our method is that it does not need the notion of Wazewski's set used in Dunbar's approach. Moreover, one nontrivial step in Dunbar's approach is to show the boundedness of solutions in the Wazewski's set before the construction of a Liapunov function and the application of LaSalle's invariance Principle. In our approach, we first convert the equations for traveling wave solutions to a system of first order equations by a "non-traditional transformation". For this converted system, we are able to construct a Liapunov function. With the use of this Liapunov function we can give a straightforward proof of the boundedness of a relevant class of solutions that correspond to traveling wave fronts. Our method provides a more efficient way to study the existence of traveling wave solutions for more general predator-prey systems. (Received August 08, 2013)