1033-34-191   **Wenzhang Huang*** (`huang@math.uah.edu`). *Sign of wave speed for bistable traveling wave solutions of a competition model.*

The existence of traveling wave solutions is common among the reaction-diffusion systems modeling many scientific problems in physics, biology and ecology. In the case where the reaction equations support bistable steady states, the sign of wave speed plays very important role that indicates which stable equilibrium is stronger when the inhomogeneous media is considered. While the sign of wave speed for the bistable wave can be determined for a scalar equation, no approach has been developed to study the sign of bistable wave for system. In this presentation we study the sign of wave speed for the bistable waves of a competition model. We will use a homotopy method, combined with the spectral analysis of an associated family of linear operators, to give a partition of the parameter space for which the corresponding system have the positive and negative wave speeds respectively. (Received September 10, 2007)