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**Jinfeng Wang** (jfwangmath@gmail.com), Harbin Institute of Technology, Harbin, 150001, Peoples Rep of China, **Junping Shi\*** (jxshix@wm.edu), College of William and Mary, Williamsburg, VA 23187, and **Junjie Wei** (weijj@hit.edu.cn), Harbin Institute of Technology, Harbin, 150001, Peoples Rep of China. *Predator-prey model with strong Allee effect on prey population.*

Classical Rosenzweig-MacArthur predator-prey model assumes a logistic growth for the prey population. A strong Allee effect on the prey population introduces a population threshold. The dynamics of ODE model is completely classified, with phenomena of Hopf bifurcation, unique limit cycle, and heteroclinic loop. The dynamics, bifurcations, and a priori estimates for the PDE model will also be discussed. (Received August 26, 2010)