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Sainan Wu and **Junping Shi*** (jxshix@wm.edu), Department of Mathematics, College of William and Mary, Williamsburg, VA 23187, and **Boying Wu** and **Jinfeng Wang**. *Dynamics and pattern formation in diffusive predator-prey system with prey-taxis or predator-taxis.*

It has been recognized that in the spatial predator-prey interaction, in addition to the random diffusion of predator and prey, the spatiotemporal variations of the predator velocity are affected by the prey gradient. The global existence and global stability of solutions to diffusive predator-prey systems with prey-taxis and a similar problem with predator-taxis are proved, and the existence of non-constant positive steady state solutions (spatial patterns) is also studied. It is shown that the prey-taxis or predator-taxis usually increases the stability of the system, and makes the spatial pattern less likely to occur. (Received September 18, 2016)