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Ruihua Liu* (rliu01@udayton.edu), 300 College Park, Dayton, OH 45469. *Optimal Stopping and American Option in A State Dependent Regime-Switching Model.*

We consider an infinite-horizon optimal stopping problem in a switching diffusion model with state-dependent switching rates. We prove that the value function is the unique viscosity solution of the associated Hamilton-Jacobi-Bellman (HJB) equation, which is given by a system of coupled variational inequalities. We examine the problem of pricing perpetual American options in the model. A numerical procedure is developed based on the dynamic programming approach and an efficient discrete tree approximation of the continuous stock price process. (Received November 12, 2014)