1014-60-57   **Q. S. Song*** (`song@math.wayne.edu`), 656 W. Kirby St. FAB 1150, Department of Mathematics, Wayne State University, Detroit, MI 48202, **George Yin** (`gyin@math.wayne.edu`), 656 West Kirby, 1217 Faculty Administration Building, Detroit, MI 48202, and **Zhimin Zhang**, 1131 Faculty/Administration Bldg, 656 W. Kirby, Detroit, MI 48202. *Numerical Solutions for Stochastic Controls and Differential Games of Regime-Switching Diffusions.* Preliminary report.

This work is concerned with numerical methods for a class of controlled regime-switching diffusions. Numerical procedures based on Markov chain approximation techniques are developed. Convergence of the algorithm is derived by means of weak convergence methods. Some examples are also provided for demonstration purpose. Stochastic differential games with regime switching is also discussed. This is a joint work with G. Yin and Z. Zhang. (Received July 08, 2005)