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G. Yin* (gyin@math.wayne.edu), Department of Mathematics, Wayne State University, Detroit, MI 48202, and **C. Zhu** (chao@math.wayne.edu). *Switching Diffusion Systems*. Preliminary report.

A switching diffusion system is one having two components, a continuous state component that delineates the diffusive motions, and a discrete event component that represents random environment changes. In this talk, we present necessary and sufficient conditions for positive recurrence. Then we study ergodicity of positive recurrent regime-switching diffusions. (Received August 06, 2006)