

1145-91-483

**Trang T.H Bui\*** (trang.bui@wayne.edu), FAB 656 W.Kirby, Detroit, MI 48202, and **Xiang Cheng, Zhuo Jin** and **George Yin**. *Approximation of a class of non-zero-sum investment and reinsurance games for regime-switching jump-diffusion models.*

This work develops an approximation procedure for a class of non-zero-sum stochastic differential investment and reinsurance games between two insurance companies. Both proportional reinsurance and excess-of loss reinsurance policies are considered. We develop numerical algorithms to obtain the Nash equilibrium by adopting the Markov chain approximation methodology and applying the dynamical programming principle for the nonlinear integro-differential Hamilton-Jacobi-Isaacs (HJI) equations. Furthermore, we establish the convergence of the approximation sequences and the approximation to the value functions. Numerical examples are presented to illustrate the applicability of the algorithms. (Received September 07, 2018)