

# JUMP TYPE STOCHASTIC DIFFERENTIAL EQUATIONS WITH NON-LIPSCHITZ COEFFICIENTS AND FELLER AND STRONG FELLER PROPERTIES

Fubao Xi *Beijing Institute of Technology, China*

Chao ZHU *University of Wisconsin-Milwaukee, USA*, E-mail: zhu@uwm.edu

**Abstract:** This work is focused on multidimensional jump type stochastic differential equations with super linear growth and non-Lipschitz coefficients. We present sufficient conditions for nonexplosion and pathwise uniqueness for such SDEs. The non confluence property for solutions is investigated. Feller and strong Feller properties under non-Lipschitz conditions are investigated via the coupling method. As applications, we also study multidimensional SDEs driven by Lévy processes and present a Feynman-Kac formula for a Cauchy problem associated with a Lévy type operator.