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Asymptotic Expansions of Transition Densities for Hybrid Jump-diffusions

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摘要 A class of hybrid jump diffusions modulated by a Markov chain is considered in this work. The motivation stems from insurance risk models, and emerging applications in production planning and wireless communications. The models are hybrid in that they involve both continuous dynamics and discrete events. Under suitable conditions, asymptotic expansions of the transition densities for the underlying processes are developed. The formal expansions are validated and the error bounds obtained.

关键词 Markov chain, jump diffusion, hybrid model, Poisson process, asymptotic expansion

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Abstract

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