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	authors	• Chaman Kumar • Tejinder Kumar	**authors**	• Chaman Kumar • Tejinder Kumar	NOT DUPLICATES	480
	title	A Note on Explicit Milstein-Type Scheme for Stochastic Differential Equation with Markovian Switching	**title**	On Explicit Tamed Milstein-type scheme for Stochastic Differential Equation with Markovian Switching		
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	id	id-9078417009669297390	**id**	id620314128625465280		
	abstract	An explicit Milstein-type scheme for stochastic differential equation with Markovian switching is derived and its strong convergence in $\mathcal{L}^2$-sense is established without using It\^o-Taylor expansion formula. Rate of strong convergence is shown to be equal to 1.0 under the assumptions that coefficients satisfy mild regularity conditions. More precisely, coefficients are assumed to be only once differentiable which are more relaxed conditions than those made in existing literature.	**abstract**	We propose a new tamed Milstein-type scheme for stochastic differential equation with Markovian switching when drift coefficient is assumed to grow super-linearly. The strong rate of convergence is shown to be equal to 1.0 under mild regularity (e.g. once differentiability) requirements on drift and diffusion coefficients. Novel techniques are developed to tackle two-fold difficulties arising due to jumps of the Markov chain and the reduction of regularity requirements on the coefficients.		
	versions		**versions**			