

**MARVOV CHAIN APPROXIMATIONS TO NON-SYMMETRIC
DIFFUSIONS WITH BOUNDED COEFFICIENTS**

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We consider a certain class of non symmetric Markov chains and obtain heat kernel bounds and parabolic Harnack inequalities. Using the heat kernel estimates we establish a sufficient condition for the family of Markov chains to converge to non-symmetric diffusions. As an application, we approximate non symmetric diffusions in divergence form with bounded coefficients by non symmetric Markov chains. This extends the results of Stroock–Zheng (1997) to the non-symmetric divergence form.

This is a joint work with T Kumagai.