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**Bogdan Doytchinov\*** (doytchinovb@etown.edu), Department of Mathematical Sciences, One Alpha Drive, Elizabethtown College, Elizabethtown, PA 17022. *Time discretization of Markov chains: kick it up a notch*. Preliminary report.

We study a natural method for constructing, for a given continuous-time Markov chain, an approximating discrete-time Markov chain, with second and higher order of approximation. Stationary and limiting distributions will also be addressed. (Received September 16, 2008)