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John Rhodes and **Anne Schilling*** (anne@math.ucdavis.edu). *Mixing time for Markov chain on linear extensions.*

We provide a general framework for computing mixing times of finite Markov chains when its minimal ideal is left zero. Our analysis is based on combining results by Brown and Diaconis with our previous work using semigroup representation theory to compute stationary distributions of finite Markov chains. We introduce a new Markov chain on linear extensions of a poset with n vertices, which is a variant of the promotion Markov chain of Ayer, Klee and the last author, and show that it has a mixing time $O(n \log n)$. (Received February 23, 2021)