

1135-60-311

**Jinsu Kim\*** (jkim522@wisc.edu), VanVelck B127, Department of Mathematics, 480 Lincoln Dr., Madison, WI 53706, and **David F Anderson**. *Network conditions for positive recurrence of stochastically modeled reaction networks and mixing times*. Preliminary report.

We consider discrete-space continuous-time Markov models of reaction networks and provide sufficient conditions for positive recurrence. The provided analytical results depend solely on the underlying structure of the reaction network and not on the specific choice of parameters. Our main analytical tool is the "tier structure" previously utilized successfully in the study of deterministic models of reaction networks. We also consider mixing times of associated continuous time Markov chains for stochastic model of reaction networks. (Received August 22, 2017)