

Tightness for Non-irreducible Markov Chains

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Technical Report, Department of Engineering-Economic Systems and Operations Research, Stanford University, (1997)

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In this paper we develop Foster-type criteria guaranteeing tightness for Markov chains which are not necessarily irreducible. The results include criteria for both tightness of the marginal distributions and tightness of the Cesaro-averaged transition probabilities. In addition, we obtain results guaranteeing boundedness in expectation for real-valued functionals of the chain.