RECURRENCE CLASSIFICATION FOR A FAMILY OF NON-LINEAR STORAGE MODELS

Peter W. Glynn
John E. Glynn
Sanatan Rai

Abstract: Necessary and sufficient conditions for positive recurrence of a discrete-time non-linear storage model with power law dynamics are derived. In addition, necessary and sufficient conditions for finiteness of $p$-th stationary moments are obtained for this class of models.

2010 AMS Mathematics Subject Classification: Primary: 60J05; Secondary: 60J20.

Keywords and phrases: Markov chains, storage theory, positive recurrence, Lyapunov functions.

THE FULL TEXT IS AVAILABLE HERE