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Uniform stability and weak ergodicity of nonhomogeneous Markov chains defined on ordered Banach spaces with a base (Article)

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Abstract

In the present paper, we define an ergodicity coefficient of a positive mapping defined on ordered Banach space with a base, and study its properties. The defined coefficient is a generalization of the well-known the Dobrushin's ergodicity coefficient. By means of the ergodicity coefficient we provide uniform asymptotical stability conditions for nonhomogeneous discrete Markov chains (NDMC). These results are even new in case of von Neumann algebras. Moreover, we find necessary and sufficient conditions for the weak ergodicity of NDMC. Certain relations between uniform asymptotical stability and weak ergodicity are considered. © 2015, Springer Basel.

Author keywords

Coefficient of ergodicity; Nonhomogeneous Markov chain; Norm ordered space; Strong ergodicity; Weak ergodicity

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