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Remarks on ergodic conditions for Markov processes on Polish spaces. (English)

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Three ergodic conditions for Markov processes on complete metric spaces are given. The first one provides a sufficient condition for Markov processes to be Harris and to have iterations of the transition operator convergent to the invariant measure in the variation norm. The second condition is necessary and sufficient for the existence of an invariant measure for Feller Markov processes. Finally, topological assumptions that guarantee the uniqueness of invariant measures for Feller Markov processes are shown. The studies were motivated by stochastic evolution equations in Hilbert spaces.

Reviewer: Ł.Stettner (Warszawa)

MSC:

60J25 Continuous-time Markov processes on general state spaces
60F99 Limit theorems in probability theory
60G10 Stationary stochastic processes
47A35 Ergodic theory of linear operators

Cited in **1** Review
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Keywords:

Harris process; Polish space; ergodic conditions for Markov processes; Feller Markov processes; stochastic evolution equations