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Multidimensional central limit theorem for sums of functions of the trajectories of endomorphisms

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Abstract

© 2016, Pleiades Publishing, Ltd.We study the rate of convergence in the central limit theorem for vector-valued sequences generated by endomorphisms of a multidimensional torus. In the proved theorem for sums of functions of the trajectories of endomorphisms of s-dimensional Euclidean space it is obtained almost optimal rate of convergence to the normal distribution. In the proof we use “method of successive approximations”, developed by us earlier (see Dubrovin V.T., Moskvin D.A. Theory of Probability & Its Applications, 1980, V. 24, Is. 3, P. 560–571) to prove limit theorems taking into account the rate of convergence for the sums of functions of sequences that satisfy a mixing condition.

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Keywords

adaptation parameters of approximation, given accuracy of optimization problem, satisfactory approximation of admissible set, Sequential unconstrained minimization methods