

The Invariance Principle for $p - \vec{\theta}$ Chain

Dihe HU, *College of Mathematics and Statistics, Wuhan University, PRC*, E-mail: dhhu@whu.edu.cn
Zhengyan Xiao, *College of Mathematics and Statistics, Wuhan University, PRC*

KEY WORDS: random transition matrix, Markov chain in random environment, skew product Markov chain, $p - \vec{\theta}$ chain, invariance principle

MATHEMATICAL SUBJECT CLASSIFICATION: 60J10

Abstract: There are two parts in this paper, in the first one we construct the Markov chain in random environment(MCRE), the skew product Markov chain and $p - \vec{\theta}$ chain from a random transition matrix and a two-dimensional probability distribution, and in the second part we prove that the invariance principle for $p - \vec{\theta}$ chain, a more complex non-homogeneous Markov chain, is true under some reasonable conditions. This result is an extension of [4],[6] and [3] in a sense.