AN EMPIRICAL FUNCTIONAL CENTRAL LIMIT THEOREM FOR WEAKLY DEPENDENT SEQUENCES

Clémentine Prieur

Abstract: In this paper we obtain a Functional Central Limit Theorem for the empirical process of a stationary sequence under a new weak dependence condition introduced by Doukhan and Louhichi [5]. This result improves on the Empirical Functional Central Limit Theorem in Doukhan and Louhichi [5]. Our proof relies on new moment inequalities and on a Central Limit Theorem. Techniques of proofs come from Louhichi [12] and Rio [16], respectively. We also deduce a rate of convergence in a Marcinkiewicz-Zygmund Strong Law.

2000 AMS Mathematics Subject Classification: 60E15, 60F05, 60F15, 60F17, 60G10.

Key words and phrases: Stationary sequences, Rosenthal inequality, moment inequalities, Functional Central Limit Theorem, empirical process, Marcinkiewicz-Zygmund Strong Law, weakly dependent sequences, Lindeberg Theorem.

THE FULL TEXT IS AVAILABLE HERE