

PRINCIPE D'INVARIANCE FAIBLE POUR LA FONCTION DE
REPARTITION EMPIRIQUE DANS UN CADRE MULTIDIMENSIONNEL
ET MELANGEANT

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Abstract: A strictly stationary and strongly or uniformly mixing sequence of random variables (ξ_n) , $n \geq 0$, is considered. There are given estimates of even moments for partial sums of Marcinkiewicz-Zygmund type and an exponential inequality for the case of a geometrically uniformly mixing random sequence.

Let F_n be the empirical repartition function of the sequence (ξ_n) and F its repartition function. There is, moreover, given, for the multidimensional case, a weak invariance principle. A stationary sequence Y_n of Gaussian processes such that

$$P(\sup_{R^d} |\sqrt{n}(F_n - F) - Y_n| \geq bn^{-a}) \leq bn^{-a} \quad \text{with} \quad a \approx \frac{1}{3(5d+4)}$$

is constructed.

For the estimate of the Prohorov distance a calculus of oscillations and a multidimensional central limit theorem were applied.

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