ASYMPTOTIC DISTRIBUTION OF THE WAVELET–BASED ESTIMATORS OF MULTIVARIATE REGRESSION FUNCTIONS UNDER WEAK DEPENDENCE

SOUMAYA ALLAOUI*, SALIM BOUZEBDA AND JICHENG LIU

Abstract. This paper investigates the nonparametric linear wavelet-based estimators of multivariate regression functions. Under mild conditions, we establish the asymptotic normality under the weak dependence, which incorporates mixing and association concepts. This framework applies to numerous classes of intriguing statistical processes, primarily Gaussian sequences and, more generally, Bernoulli shifts. We give an application for the confidence interval.


Keywords and phrases: Multivariate regression estimation, wavelets basis, Besov spaces, weakly dependent processes, stationarity, central limit theorem, confidence intervals.

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