

Nonparametric estimation of conditional medians for linear and related processes

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Abstract We consider nonparametric estimation of conditional medians for time series data. The time series data are generated from two mutually independent linear processes. The linear processes may show long-range dependence. The estimator of the conditional medians is based on minimizing the locally weighted sum of absolute deviations for local linear regression. We present the asymptotic distribution of the estimator. The rate of convergence is independent of regressors in our setting. The result of a simulation study is also given.

Keywords Local linear estimator · Least absolute deviation regression · Conditional quantiles · Linear processes · Short-range dependence · Long-range dependence · Random design · Martingale CLT · Simulation study