

## SEMIPARAMETRIC ESTIMATION OF THE LONG-RANGE PARAMETER\*

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**Abstract.** We study two estimators of the long-range parameter of a covariance stationary linear process. We show that one of the estimators achieve the optimal semiparametric rate of convergence, whereas the other has a rate of convergence as close as desired to the optimal rate. Moreover, we show that the estimators are asymptotically normal with a variance, which does not depend on any unknown parameter, smaller than others suggested in the literature. Finally, a small Monte Carlo study is included to illustrate the finite sample relative performance of our estimators compared to other suggested semiparametric estimators. More specifically, the Monte-Carlo experiment shows the superiority of the proposed estimators in terms of the Mean Squared Error.

*Key words and phrases:* Long-range dependence, spectral estimation.

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