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A CONSISTENT ESTIMATOR FOR SPECTRAL DENSITY MATRIX OF A DISCRETE TIME PERIODICALLY CORRELATED PROCESS

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Abstract: In this article, we introduce a weighted periodogram in the class of smoothed periodograms as a consistent estimator for the spectral density matrix of a periodically correlated process. We derive its limiting distribution that appears to be a certain finite linear combination of Wishart distribution. We also provide numerical derivations for our smoothed periodogram and exhibit its asymptotic consistency using simulated data.

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