

Inference of Seasonal Long-Memory Time Series with Measurement Errors

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Abstract

We consider the estimation of Seasonal Autoregressive Fractionally Integrated Moving Average (SARFIMA) models in the presence of additional measurement errors by maximizing the Whittle likelihood. We show that the maximum Whittle likelihood estimator (spectral maximum likelihood estimator) is asymptotically normal, and study its finite-sample properties through simulation. The efficacy of the proposed approach is illustrated by a real-life internet traffic example.

Keywords: Asymptotic normality; Consistency; Seasonal auto-regressive fractionally integrated moving-average models; Spectral density; Spectral maximum likelihood estimator; Whittle likelihood.