



Parametric or nonparametric: the FIC approach for stationary time series

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We seek to narrow the gap between parametric and nonparametric modelling of stationary time series processes. The approach is inspired by recent advances in focused inference and model selection techniques. Our paper generalises and extends current work by developing a new version of the focused information criterion (FIC), directly comparing the performance of both parametric and nonparametric time series models. This is achieved by comparing the mean squared error for estimating a focus parameter under consideration, for each candidate model. In particular this yields FIC formulae for covariances or correlations at specified lags, for the probability of reaching a threshold, etc. Suitable weighted average versions, the AFIC, also lead to model selection strategies for finding the best model for the purpose of estimating e.g. a sequence of correlations.

Keywords: focused inference; model selection; time series modelling; risk estimation.