

# Optimal Experimental Designs for Time Series Models

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## SUMMARY

Time Series models are a sort of nonlinear models where the observations are not independent and the function which defines this correlation depends on the mean of the model. In this work, these models are studied from the framework of Optimal Experimental Design in order to obtain the best moments to perform the experiments. The model and the covariance function are expressed in a suitable form to apply the usual techniques of Optimal Experimental Design. The expression of the Fisher information matrix is provided for estimating the parameters of the model when they appear in the covariance function. Optimal designs for the simplest models are computed for different nominal values of the nonlinear parameter and their efficiencies are compared. Finally, more complex models are proposed.

**Keywords:** Time Series, Correlation, Optimal Design

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