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Time series models with given interactions. (English) [Zbl 1135.62367](#)

Cuadras, Carles M. (ed.) et al., Distributions with given marginals and statistical modelling. Papers presented at the meeting, Barcelona, Spain, July 17–20, 2000. Dordrecht: Kluwer Academic Publishers (ISBN 1-4020-0914-3/hbk). 93-102 (2002).

Summary: In seasonal time series for instance there may be interactions at small and large time lags, while interactions at intermediate time lags are missing. We use graphical models to explore and compare the structures of ARMA models and of models based on multivariate marginals of a time series. While the latter are equivalent to AR models if no additional restrictions are imposed, assuming conditional independence of model missing interactions results in models which do not belong to the class of ARMA models. Formulae for optimal interpolations in this new model class are simpler than in seasonal ARMA models. We present some simulations and an application to real data providing evidence that we may benefit from imposing such conditional independence restrictions instead of using a seasonal ARMA model.

For the entire collection see [\[Zbl 1054.62002\]](#).

MSC:

[62M10](#) Time series, auto-correlation, regression, etc. in statistics (GARCH)

[62-09](#) Graphical methods in statistics (MSC2010)