

# Parsimonious Multiple Time Series Models

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**Room Benvenuti and live Zoom**

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The dependence between multiple time series can be effectively modeled by the univariate extension of autoregressive moving average (ARMA) models, simply named vector autoregressive moving average (VARMA) models. In particular the subclass of VAR models is often used.

The number of parameters needed for this class of models depends on the number of different time series involved and it is becoming more and more common to models complex systems with a large number of time series involved.

In this seminar we will look at some methods we have to reduce the number of parameters. These methods are either more parsimonious alternative models or strategies to induce sparsity. In particular graphical modelling can offer a useful approach to obtain a sparse structure of VARMA models while ZAR is a more parsimonious alternative model.