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MASTER'S THESIS PRESENTATION

Discovering Graphical Granger Causality Using Different Lasso Methods

WHEN
May 2, 2022
11:30 AM

WHERE
Zoom Meeting
For ZOOM presentations, details will be provided in an email announcement for this seminar.

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Granger causality is a kind of causality in time series, and is often applied in VAR model. To discuss graphical Granger causality, we can extend the concept of Granger causality to MVAR model. Lasso methods are common methods for estimating Granger causality in DAGs. Firstly, we introduce four different lasso methods, including regular lasso method, adaptive lasso method, group lasso method and truncating lasso method, and also discuss the limitations and advantages of these four lasso methods. Then we simulate some data and compare four lasso methods using some performance criteria including REE, precision, recall and F1-Score. We also visualize Granger causality in estimated network based on different lasso methods. Finally we draw a conclusion that truncating lasso method could give some significant improvement for estimation of Granger causality over the regular lasso and adaptive lasso methods.

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