

Workshop 2: Sky is the Limit: Bringing the Exponential Smoothing to the Next Level

Ivan Svetunkov and Kandrika Pritularga, Lancaster University

Exponential smoothing is one of the most popular forecasting approaches used in practice. It is robust, it has performed very well in many forecasting competitions and is easy to implement and interpret. While the exponential smoothing in the ETS form works well in many contexts, there have been many advances in forecasting area making it applicable in a wide variety of areas. These include ETS with explanatory variables (ETSX), intermittent demand ETS, high frequency modifications of the model, different techniques for the model estimation, selection, and combination of forecasts and more. In this workshop, we will briefly cover several topics in the area of exponential smoothing:

1. Introduction to ETS
2. Estimation approaches (conventional and modern ones, such as LASSO, multistep estimators etc)
3. Model selection and combinations
4. ETS with explanatory variables
5. ETS for intermittent demand.

The workshop will be done as a set of interactive lectures, and the participants will be provided with computer lab materials with detailed explanation of how to use the discussed models in R – it will be assumed that you can do the tasks on your own, but you will be encouraged to get in touch with the course convenors if you have any questions. The participants are expected to understand forecasting principles. If participants have not used R before, we will provide an introductory workshop explaining how to work with it.

The workshop will rely on materials from the monograph "Forecasting and Analytics with ADAM" by Ivan Svetunkov (<https://openforecast.org/adam/>) and the textbooks "Principles of Business Forecasting" by Ord, Fildes & Kourentzes and "Intermittent Demand Forecasting. Context, Methods and Applications" by Boylan & Syntetos.