

Error evolution patterns in multi-step ahead streamflow forecasting

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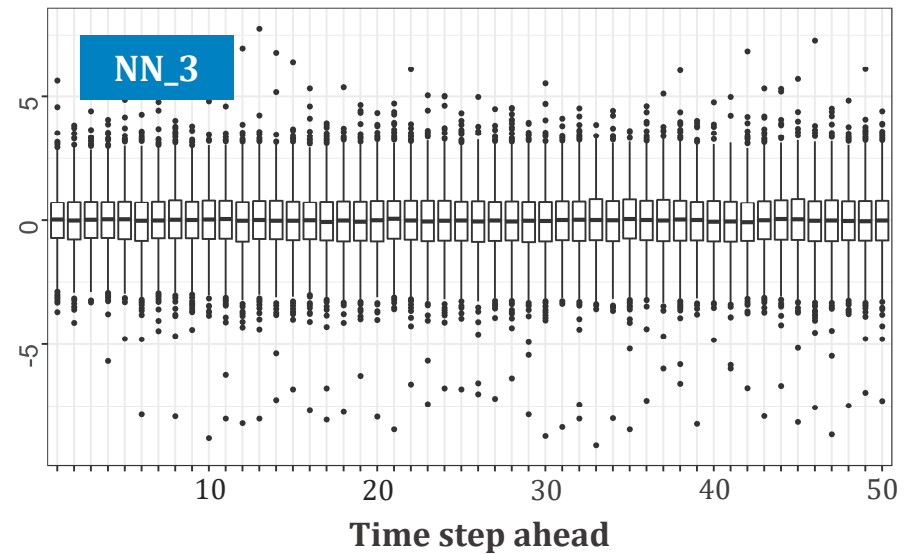
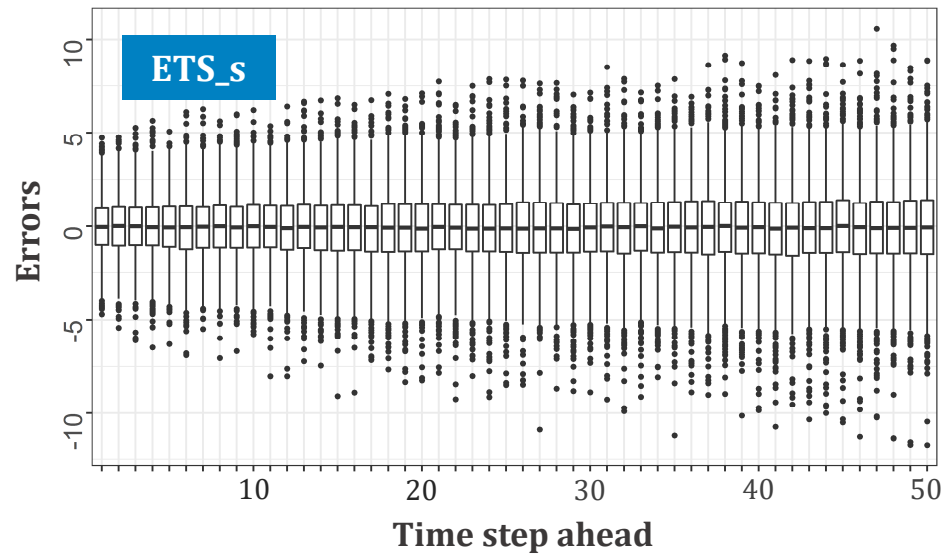
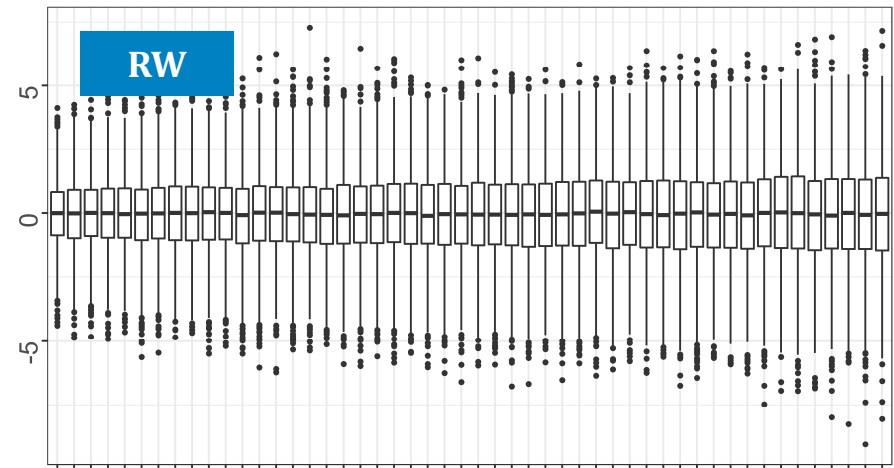
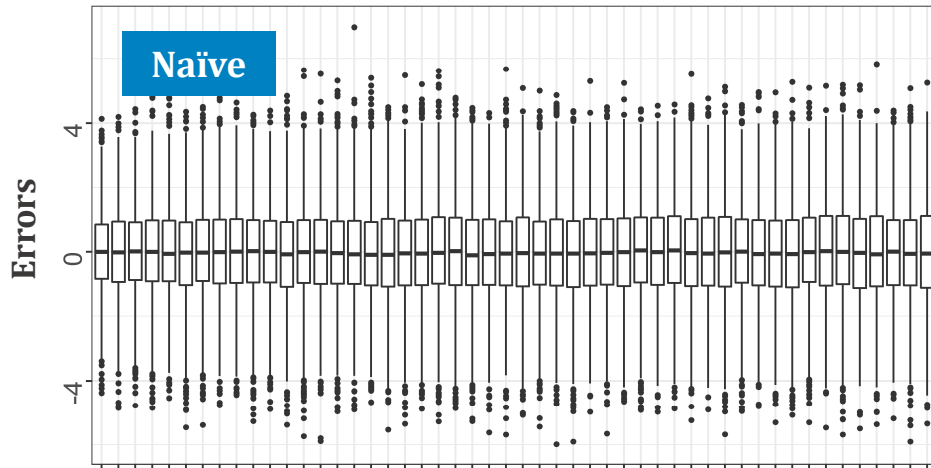
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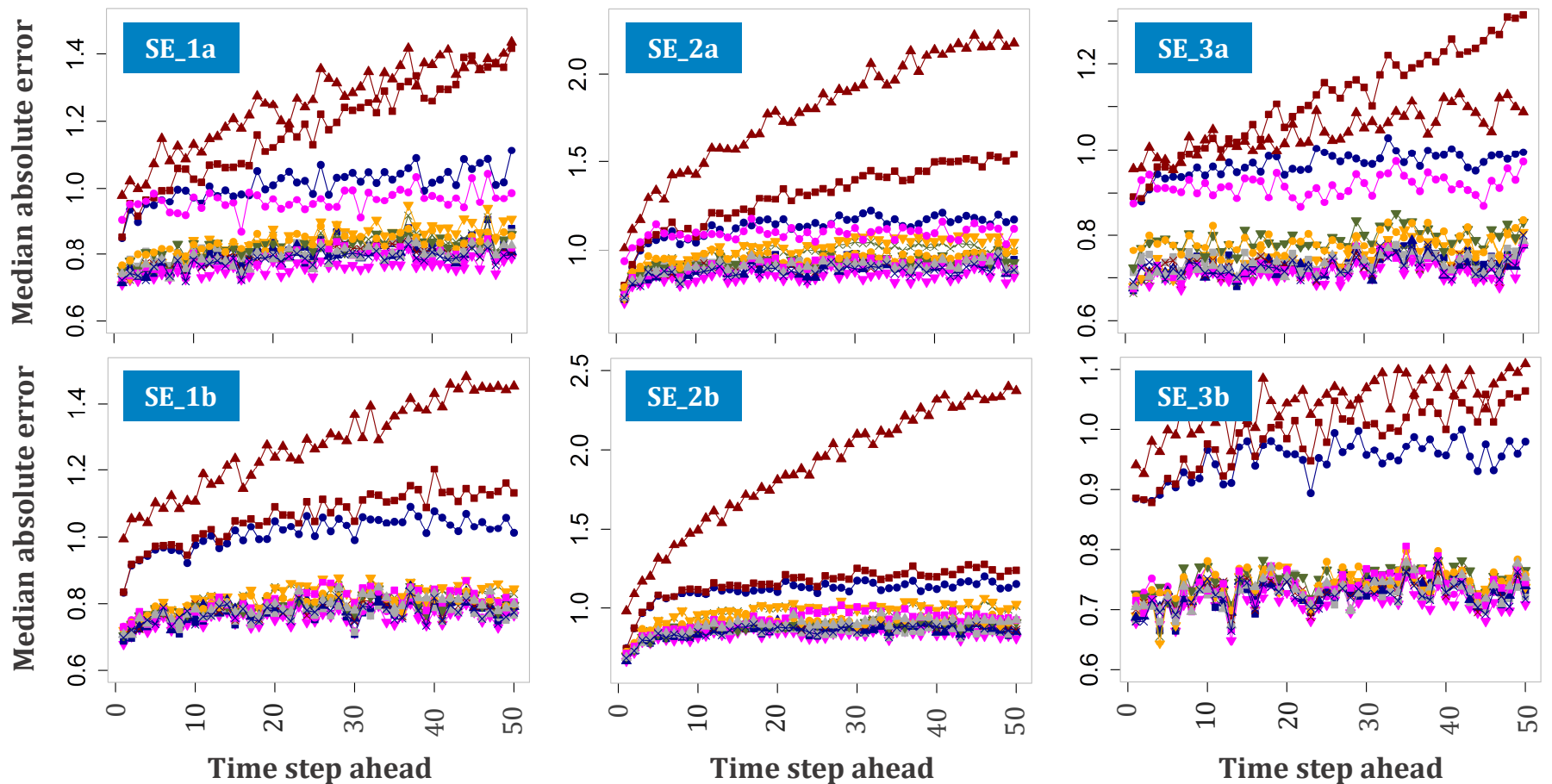
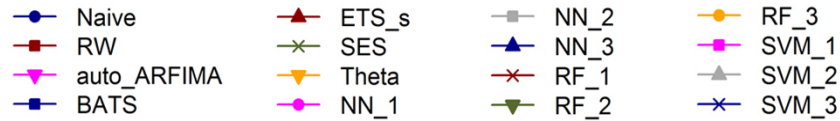
One-slide summary

- **Background information:** Multi-step ahead streamflow forecasting is of practical interest.
- **Objective:** We examine the error evolution in multi-step ahead forecasting.
- **Motivation:** The forecast errors are unavoidable; therefore, their proper modelling is important.
- **Aim:** We aim at increasing the understanding on how the errors may occur to facilitate this modelling.
- **Methodological information:** We compare 16 forecasting methods on 12 000 simulated time series. We also present a comparative case study using monthly streamflow data.
- **Novelty:** We examine the errors and the absolute errors at each time step of the forecast horizon themselves, and not their summary as provided by metrics commonly used for the assessment of multi-step ahead forecasts (e.g. Nash-Sutcliffe, RMSE, MAPE).
- **Main finding:** The error evolution patterns can differ to a great extent from the one forecasting method to the other. This information is important in a long-run perspective.
- **Utility of the results:** The results could be used to decide on a forecasting method and for the proper modelling of the forecast errors, which is currently an open challenge.

Error evolution patterns

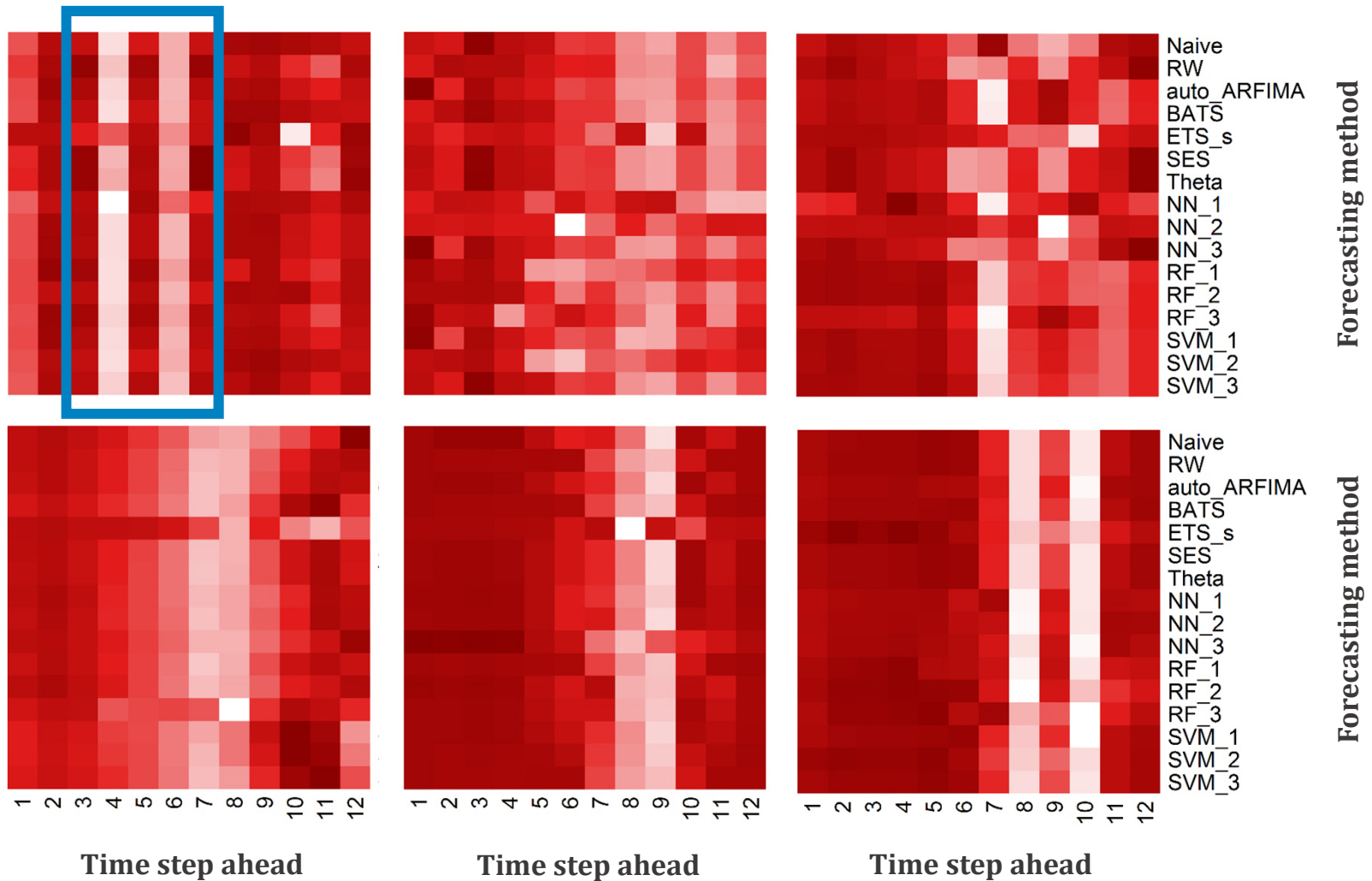


Medians of the absolute errors



Comparative case study

The darker the colour the smaller the absolute forecast errors.



**You are kindly invited to visit our poster
for a discussion on the results, their
interpretation and useful insights into
the nature of multi-step ahead
streamflow forecasting!**