

# Evaluation software tools

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(DWD)

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# Parameters evaluated and verification scores

- Precipitation
  - Time aggregation: daily
  - Scores: EDA, PDF-scores, scale decomposition  
approach: intensity-scale skill score
- Wind speed (10m to 116m)
  - Time aggregation: hourly to monthly
  - Scores: correlation, bias vs height, variance,  
seasonal cycle, daily cycle
- Temperature (2m)

# Sharing the code

- ➔ Available on GitHub
  - ➔ The “Git” in GitHub: git is an open-source version control system that was started by Linus Trovalds – the same person who created Linux.
  - ➔ The “Hub” in GitHub: git is a command-line tool, but the centre around which all things involving git revolve – effectively, the Hub, is GitHub.com, where developers can store their projects and network with like-minded people.
- ➔ UERRA-EVA: <https://github.com/UERRA-EVA>

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## Uncertainties in Ensembles of Regional Reanalysis

WP3 - Assessing uncertainties by evaluation against independent observational datasets

<http://www.uerra.eu>    [cristian.lussana@met.no](mailto:cristian.lussana@met.no)

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## EVA stationobs

UERRA common evaluation procedure: assessing uncertainties in reanalysis by evaluation against station observations

● R Updated 7 days ago



## EVA\_gridobs

UERRA common evaluation procedure: assessing uncertainties in reanalysis by evaluation against gridded observational datasets

● R Updated on 16 Jun 2015

Top languages



## People

32



cristianlussana



MichaelBorsche



OleEinar

Invite someone

## GitHub repository: EVA\_stationobs

- [https://github.com/UERRA-EVA/EVA\\_stationobs](https://github.com/UERRA-EVA/EVA_stationobs)
- R-package developed within git
  - Reading reanalysis and observation data
  - Calculating and plotting statistical measures
  - Published on GitHub

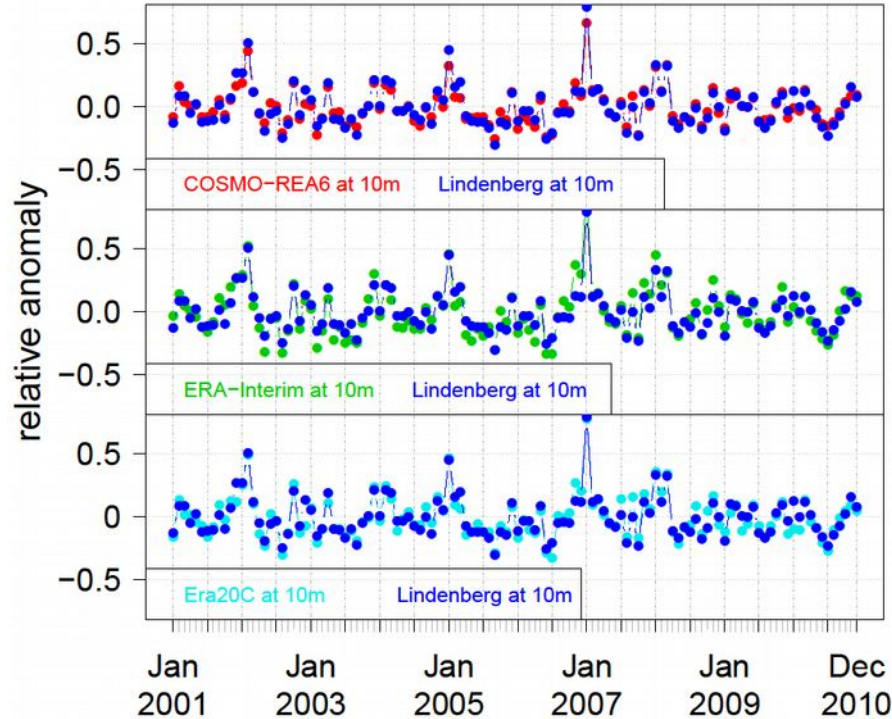


## Scores

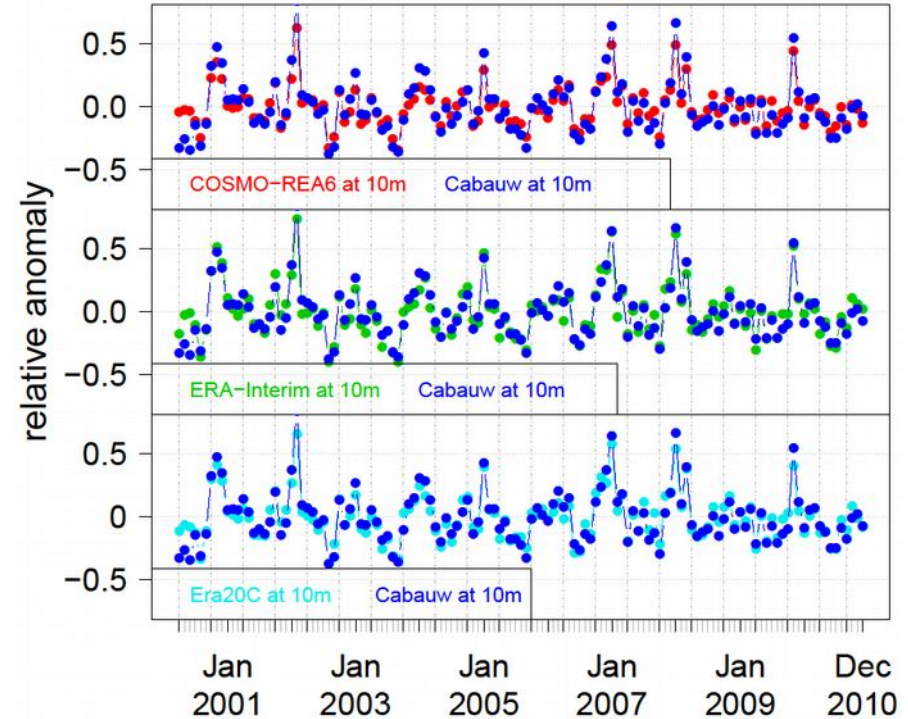
- ➔ Correlation, bias, RMSE, anomalies, PDF-score, frequency distribution
- ➔ Contingency table based scores for extreme event analysis:
  - ➔ hit rate, false alarm rate, false alarm ratio, HKS, TS, ETS, frequency bias index, HSS, accuracy, odd ratio, EDI, SEDI



Monthly relative wind speed  
anomalies at Lindenberg

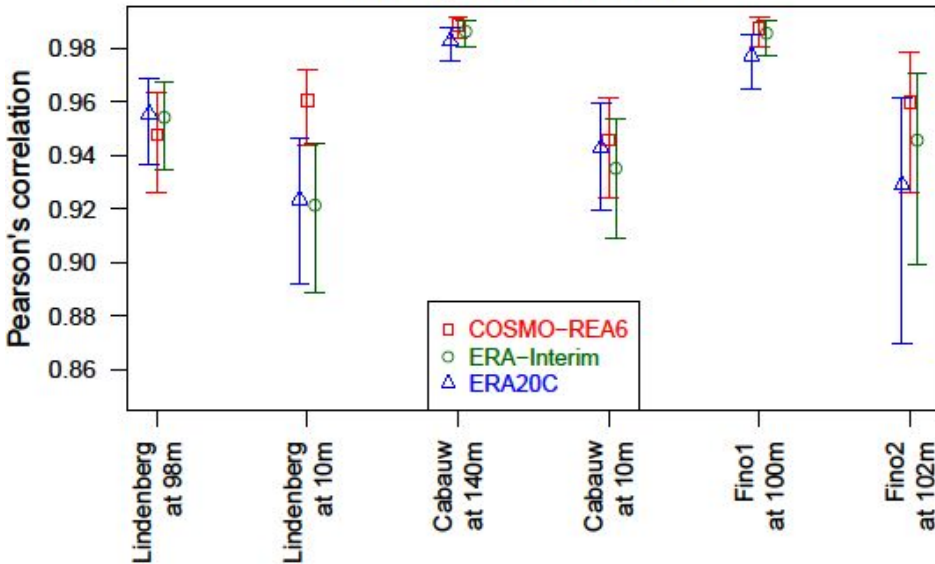


Monthly relative wind speed  
anomalies at Cabauw

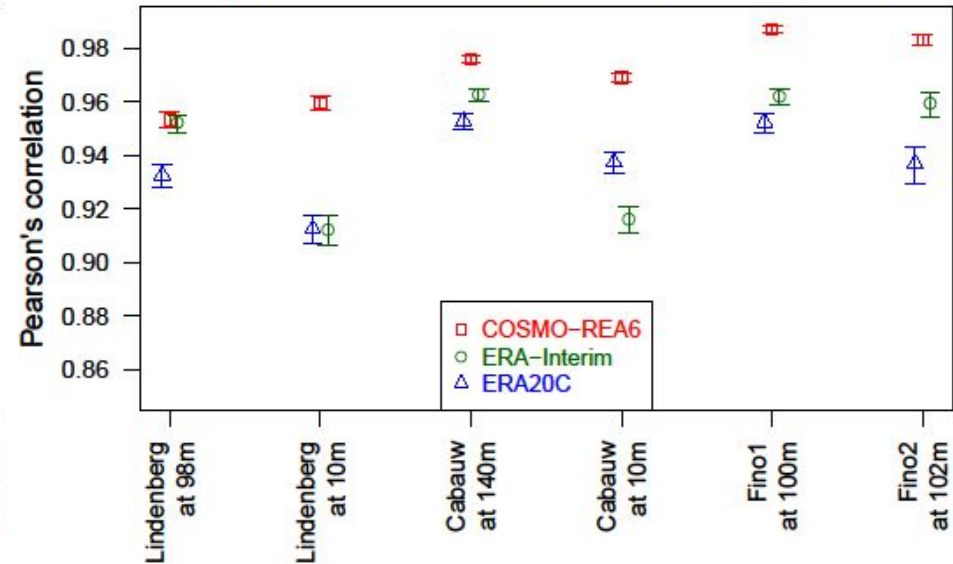




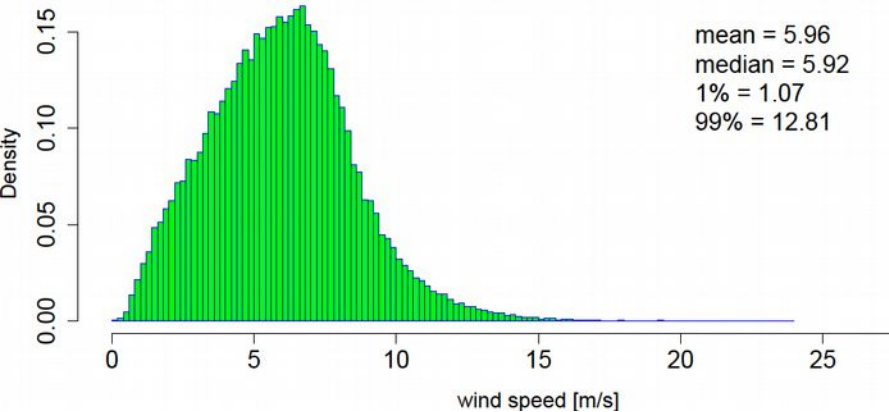
Monthly correlation values



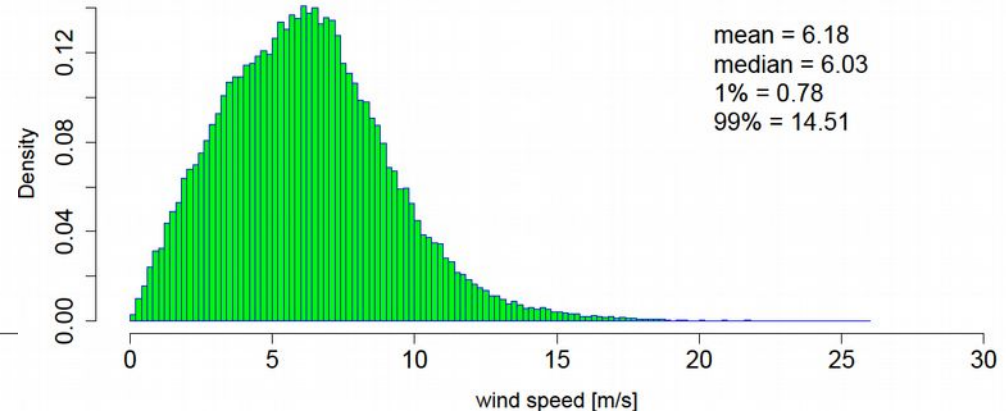
Daily correlations based on native temporal resolution



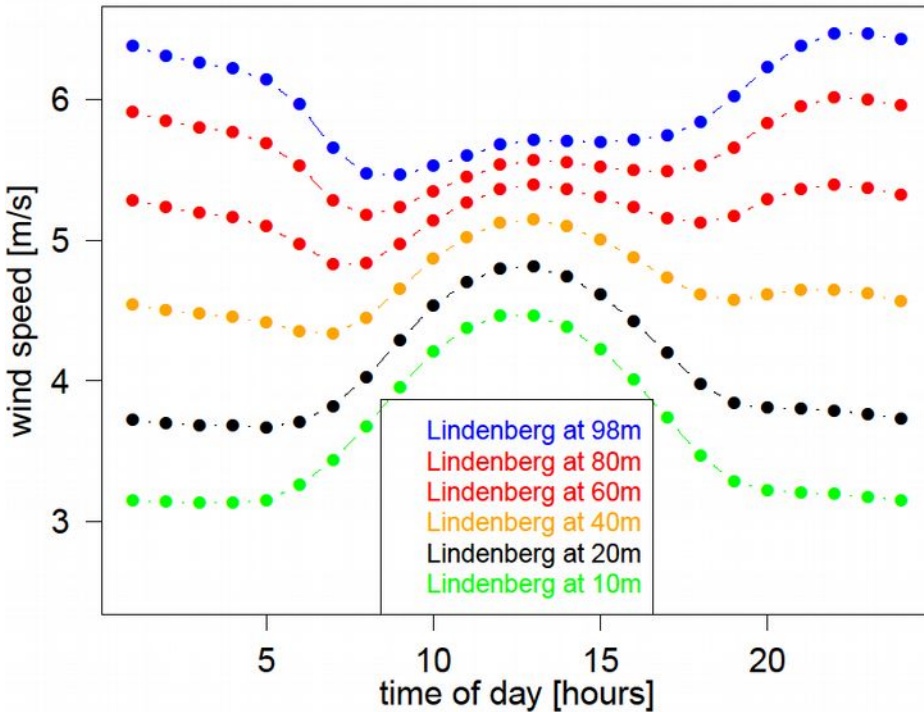
Hourly wind speed at Lindenberg in 98m



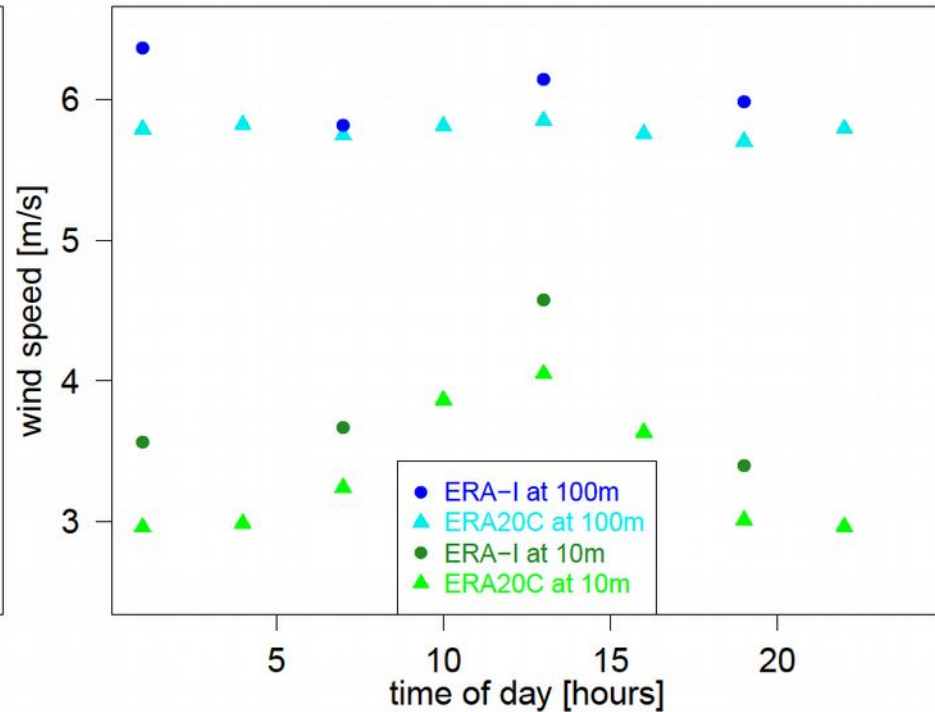
Hourly wind speed of COSMO-REA6  
at Lindenberg in 116m

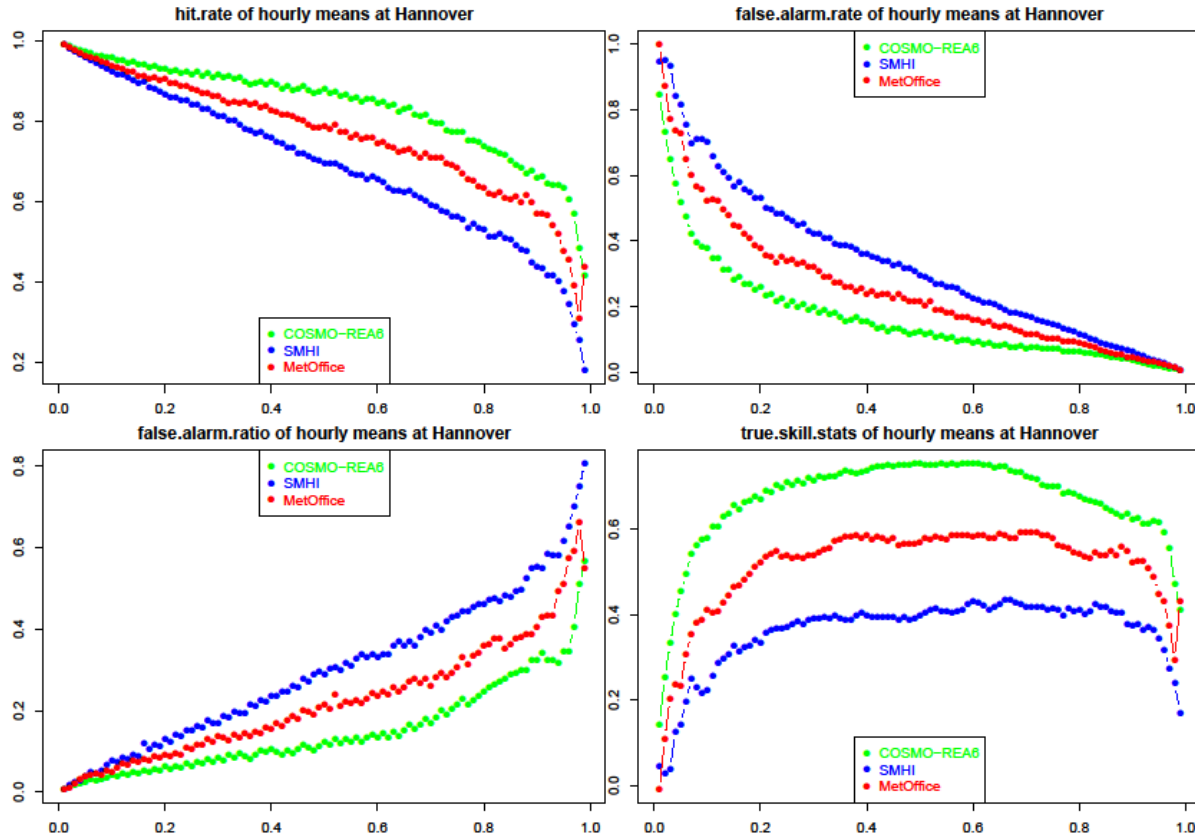


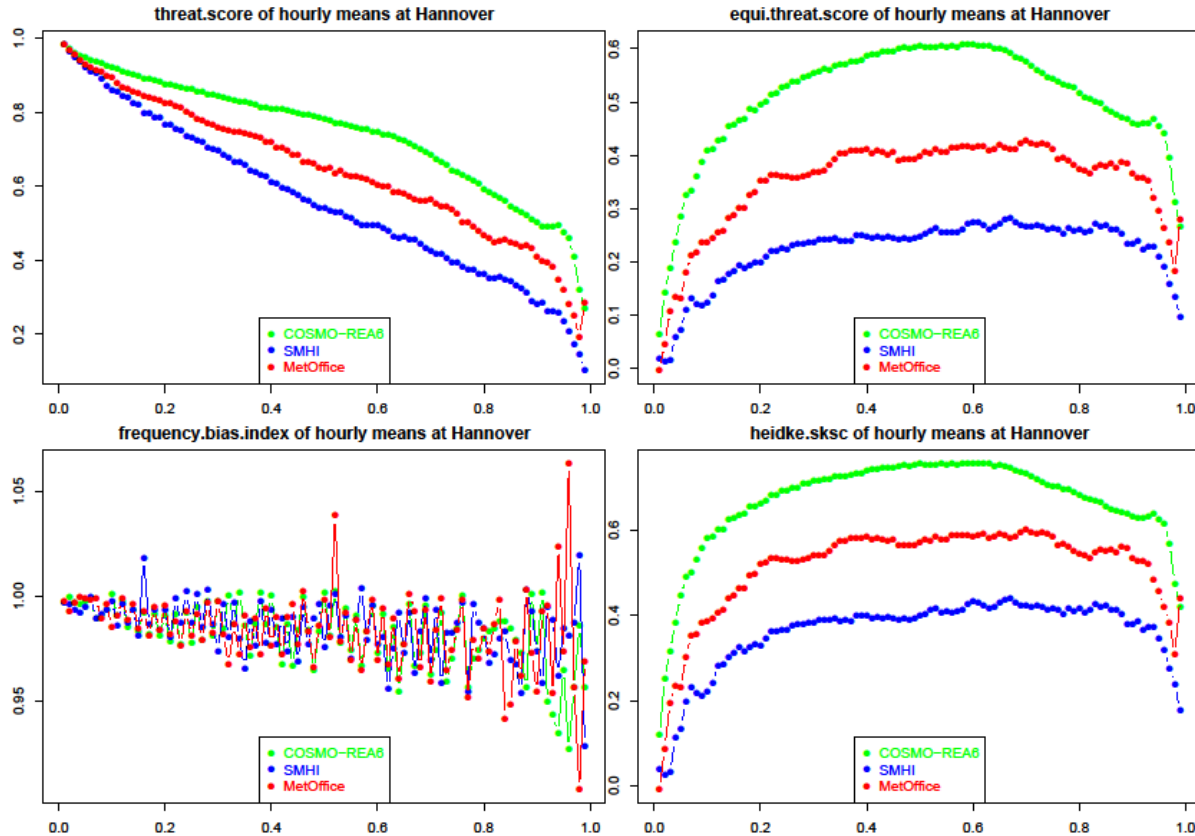
Daily cycle of  
Lindenberg wind speed

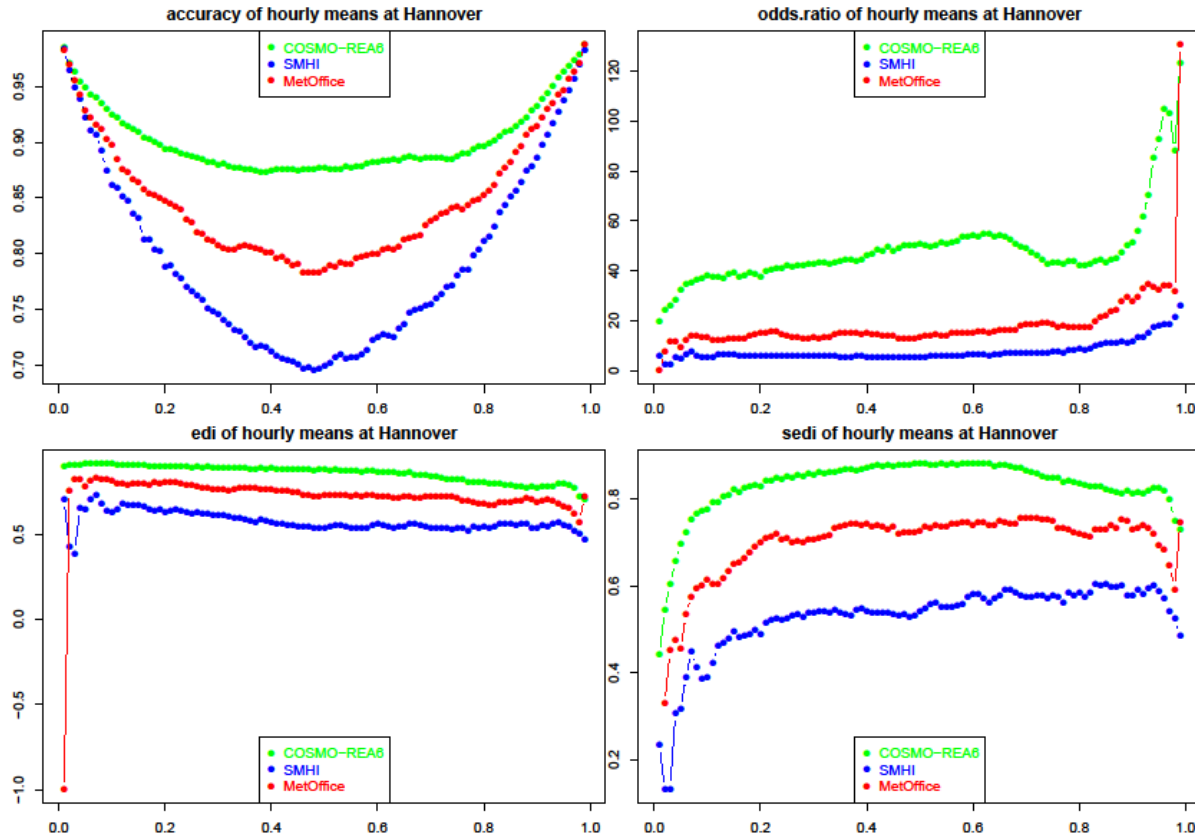


Daily cycle of ERA20C and ERA-I wind speed  
at tower location Lindenberg

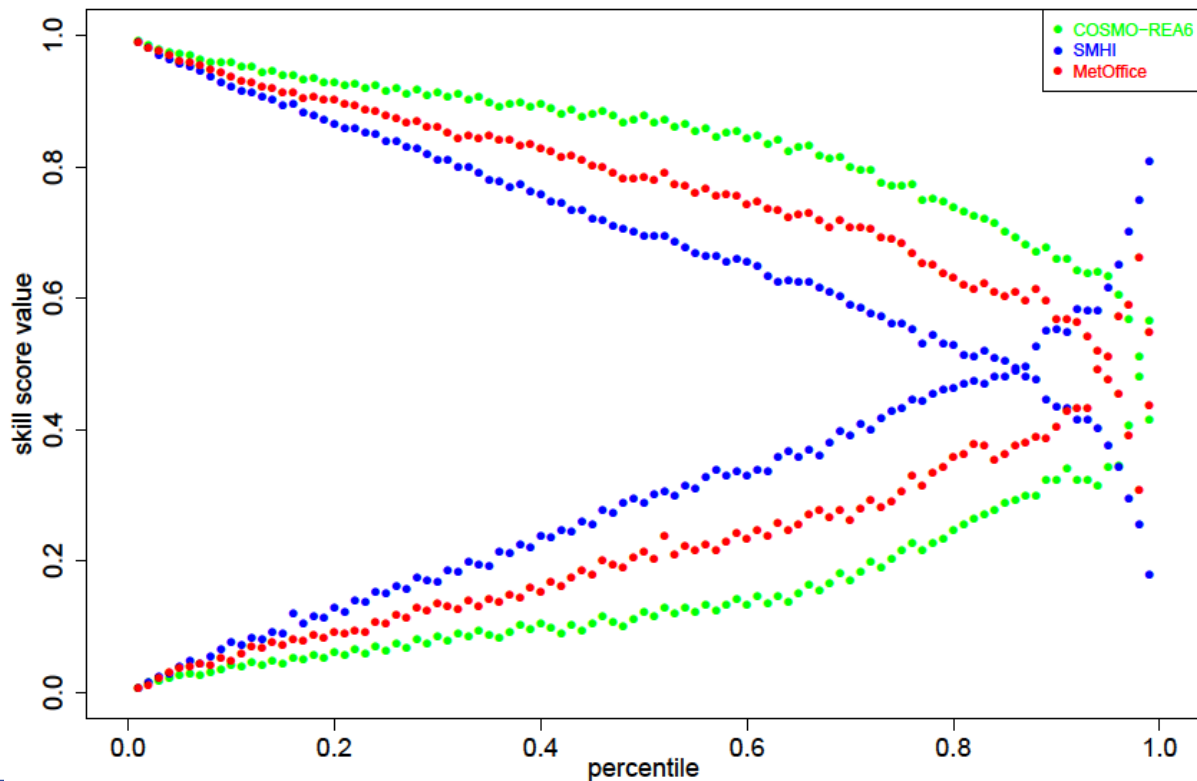








Hit rate vs False alarm ratio of hourly means at Hannover





# Summary

- Read station and mast tower observations
- Read different regional and global reanalyses
- Calculate statistical measures to assess uncertainty
- Plot analysis results
- Developed in R as a package and with the help of git
- Published on GitHub: <https://github.com/UERRA-EVA>