

Evaluation software tools

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(DWD)

UERRA showcase, 24 Nov 2016, Reading, UK



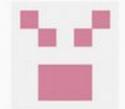
Parameters evaluated and verification scores

- 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

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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
R

People 3 >
cristianlussana
MichaelBorsche
OleEinar
Invite someone

GitHub repository: 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

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UERRA-EVA / EVA_stationobs Unwatch 2 Star 0 Fork 0

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

219 commits 2 branches 1 release 1 contributor

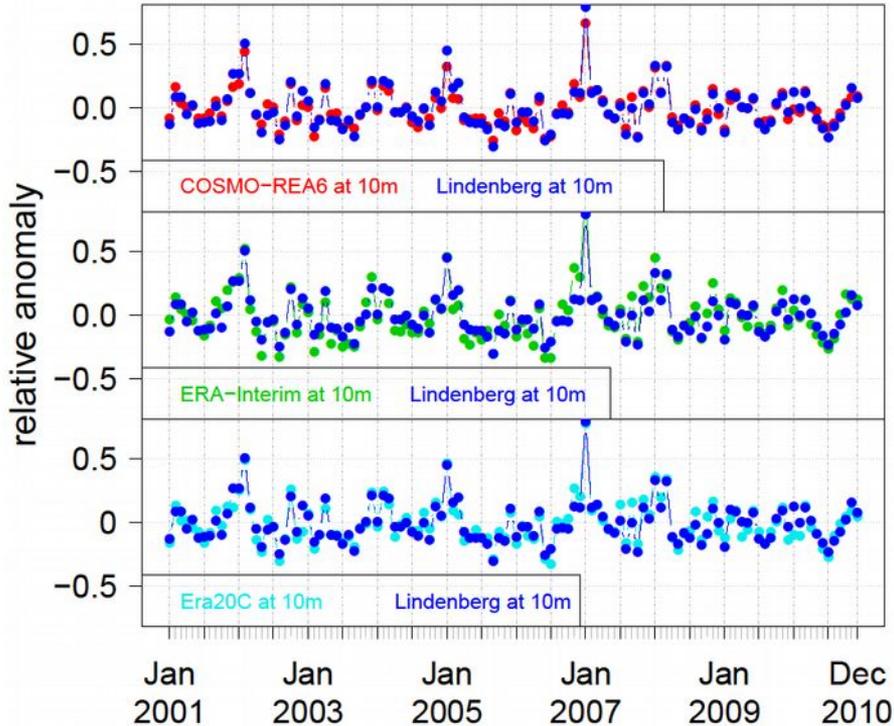
Branch: master New pull request Create new file Upload files Find file Clone or download

Commit	Description	Time
MichaelBorsche enhancing histogram plots		Latest commit 78791ef 7 days ago
DWD_station_data	adding package EVAstatobsR	2 years ago
EVAstatobsR	enhancing histogram plots	7 days ago
data	enhancing plotting	a year ago
output	adding empty directories	2 years ago
.Rbuildignore	Build a package from separate files	2 years ago
.gitignore	add CDC station files	a year ago
AnalyseTowerWindspeed.R	enhancing histogram plots	7 days ago
AnalyseWindspeed.R	update to station histogram plots	9 months ago
AnalyseWindspeedManyRRAs.R	enhancing histogram plots	7 days ago
Calc.thresholds.R	new script to calculate threshold percentiles	6 months ago
PlotHist_SeparatePlots.R	enhancing histogram plots	7 days ago
README.md	further working on README.md	a year ago
Settings.R	correcting previous commit	a month ago
SettingsManyRRAs.R	enhancing histogram plots	7 days ago
SettingsTower.R	add new function to plot correlation values	28 days ago

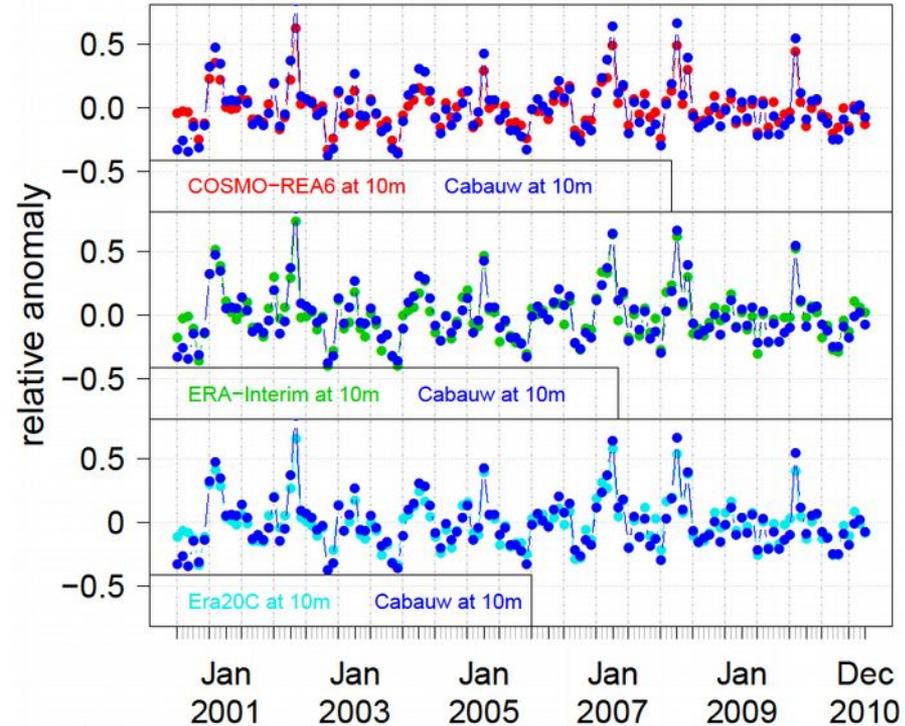
Scores

- 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

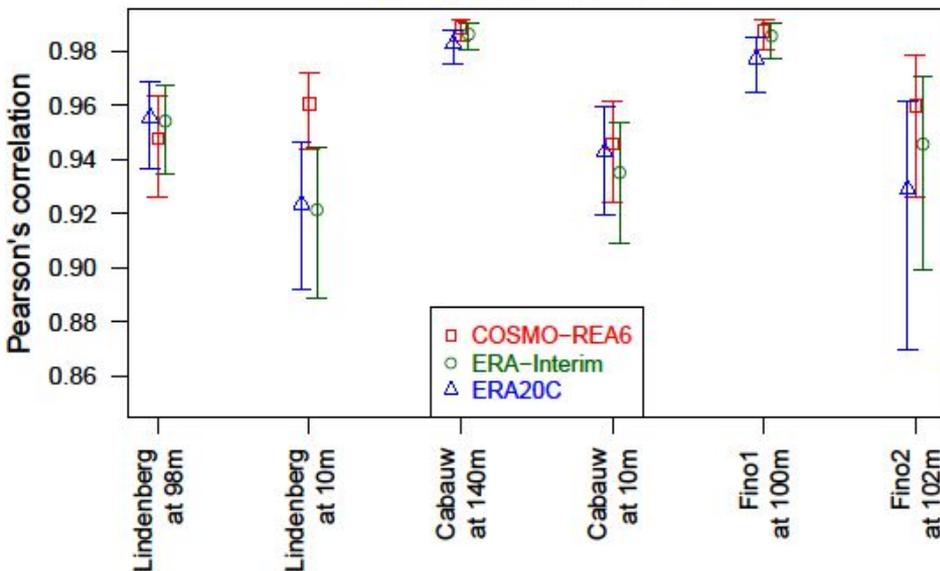
Monthly relative wind speed anomalies at Lindenberg



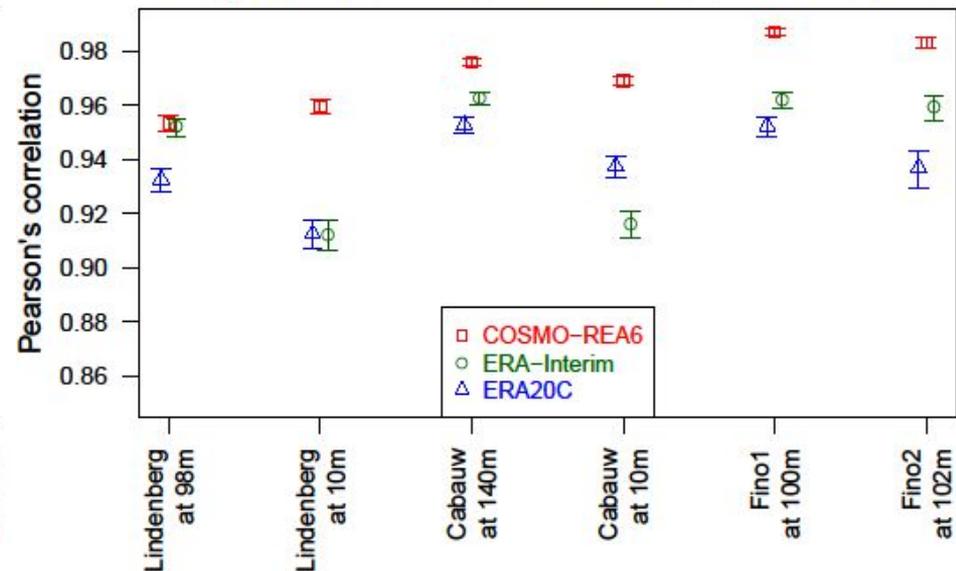
Monthly relative wind speed anomalies at Cabauw



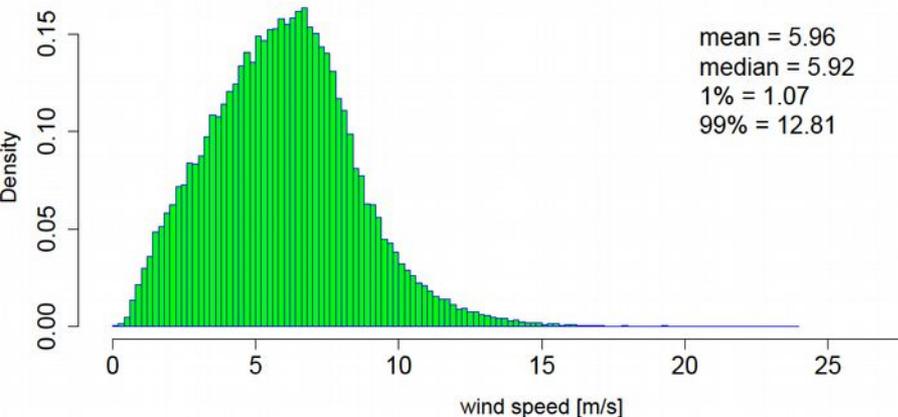
Monthly correlation values



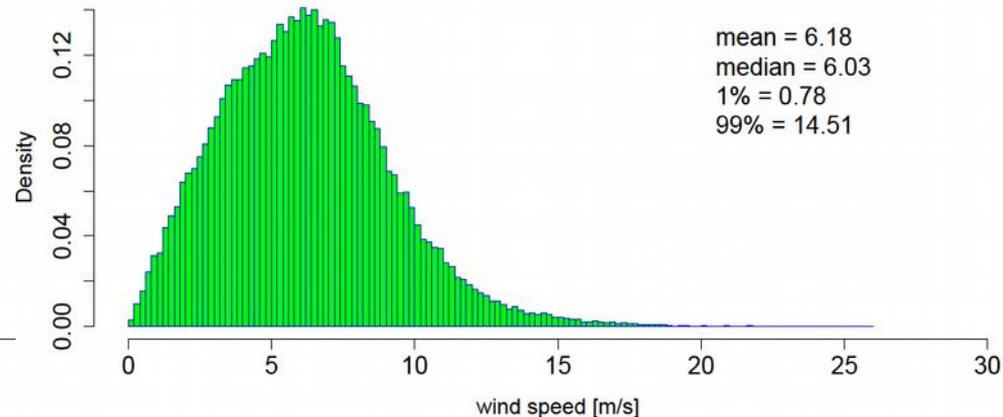
Daily correlations based on native temporal resolution



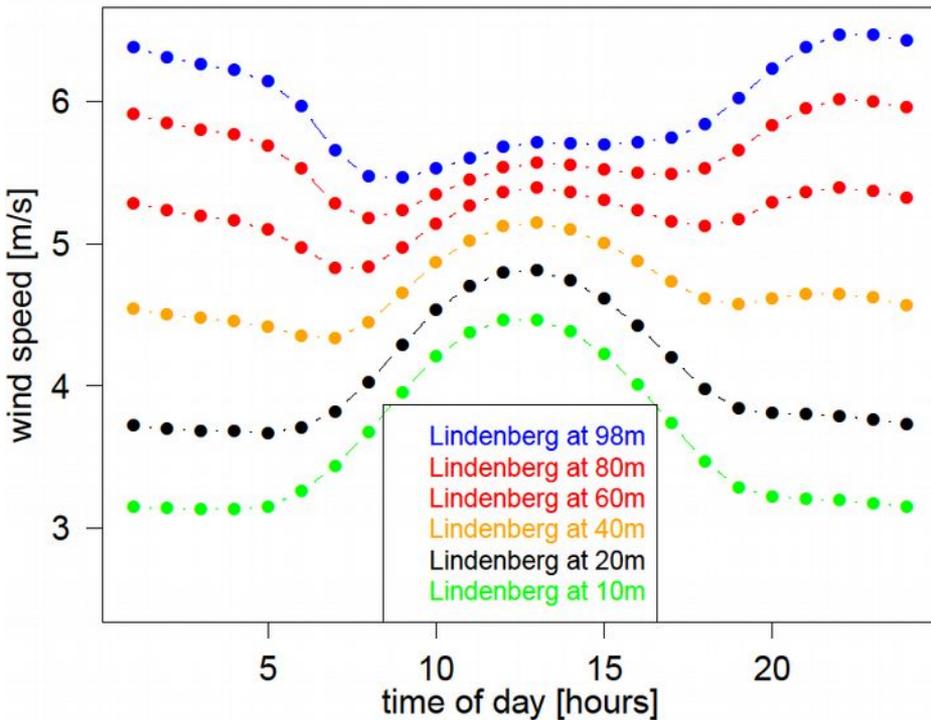
Hourly wind speed at Lindenberg in 98m



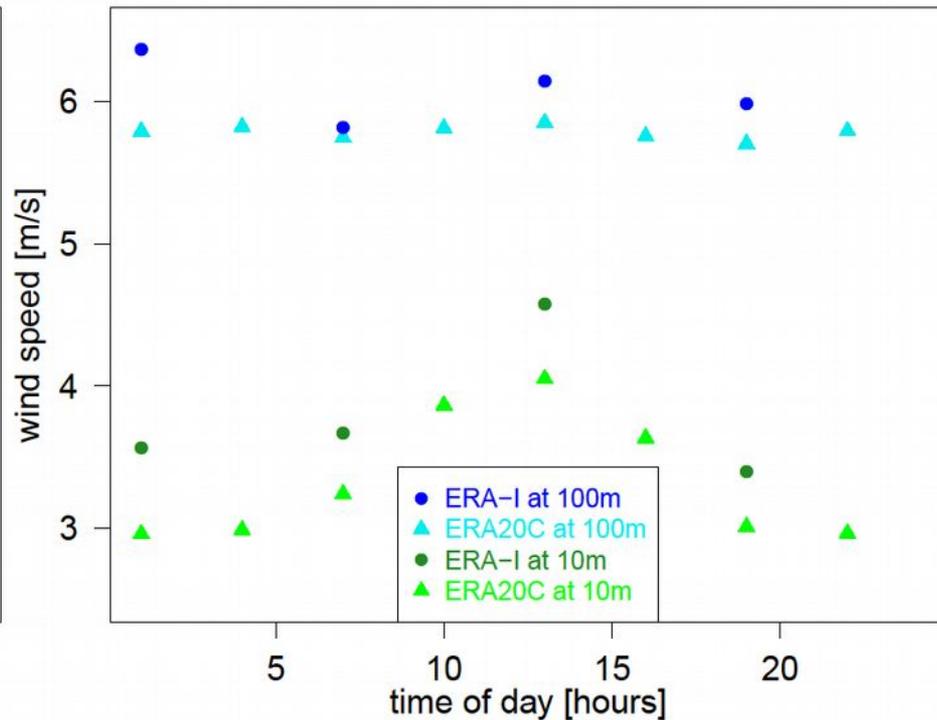
Hourly wind speed of COSMO-REA6
at Lindenberg in 116m

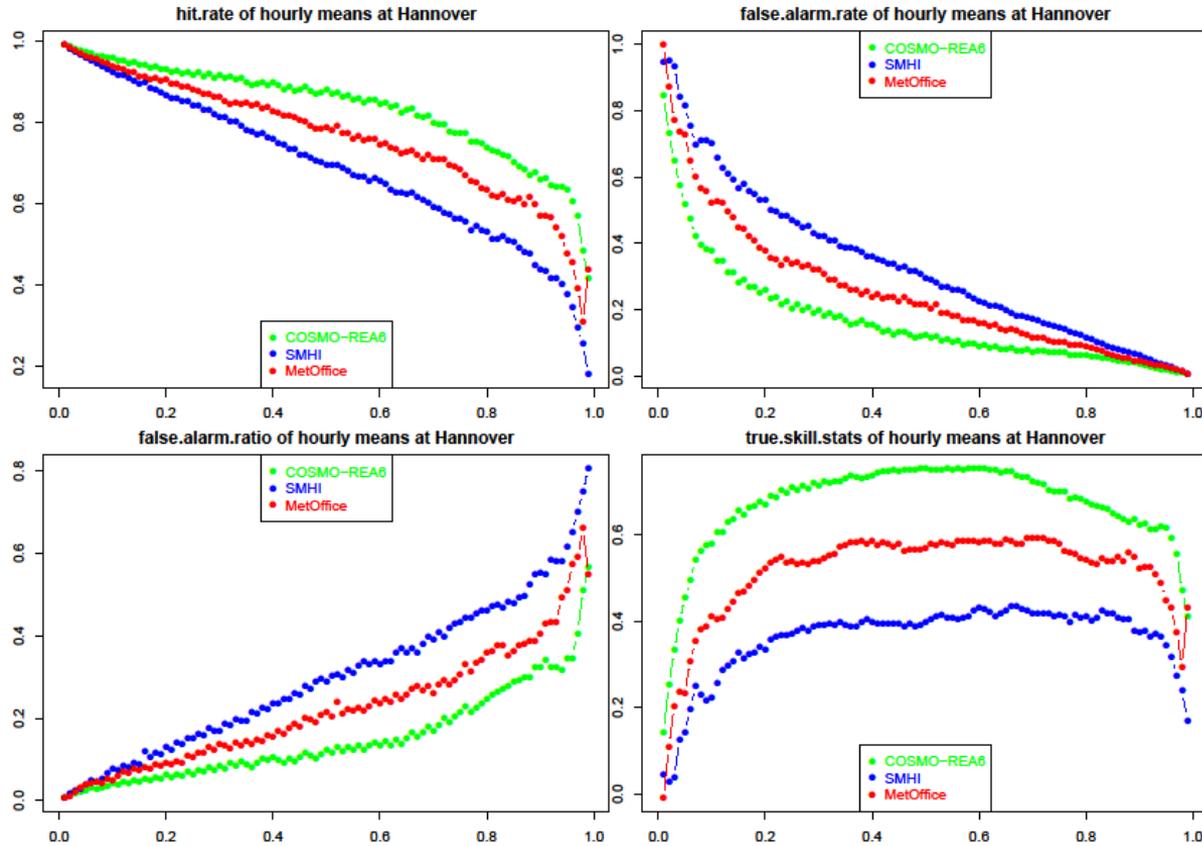


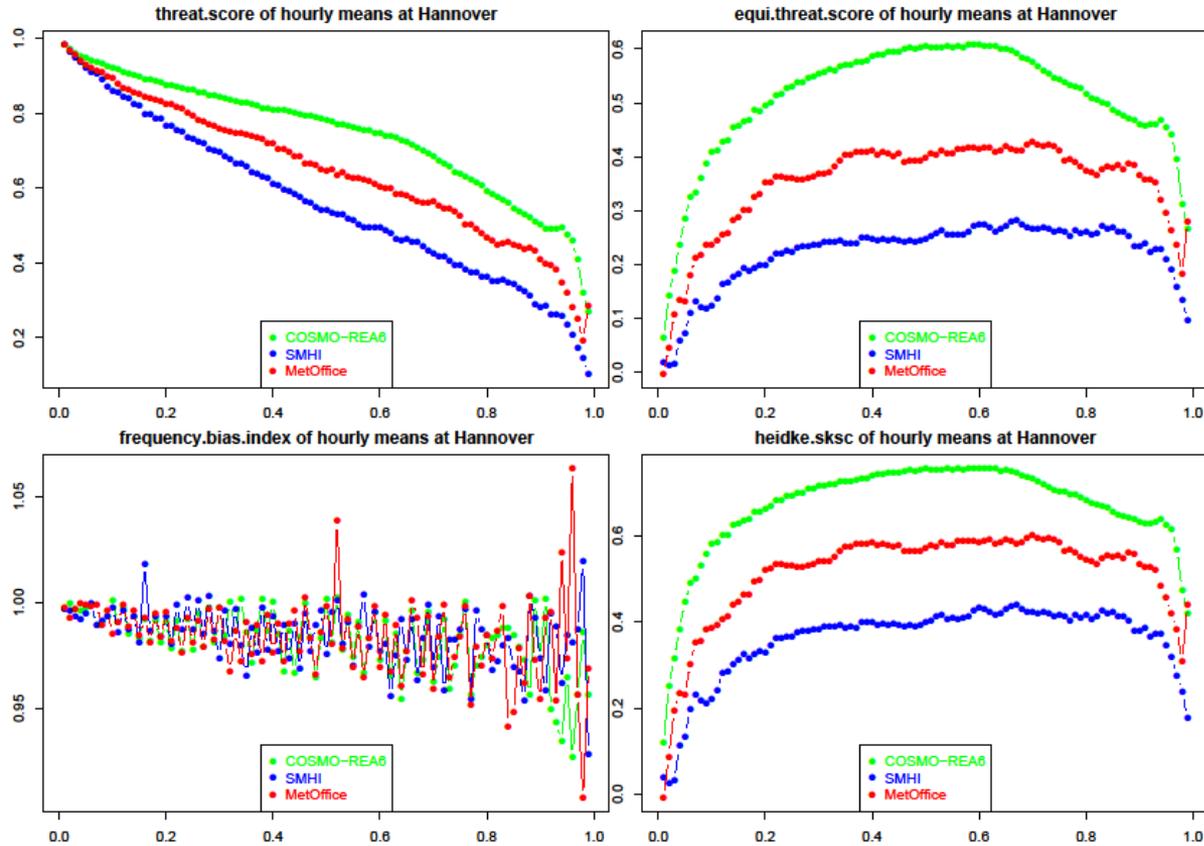
Daily cycle of
Lindenberg wind speed

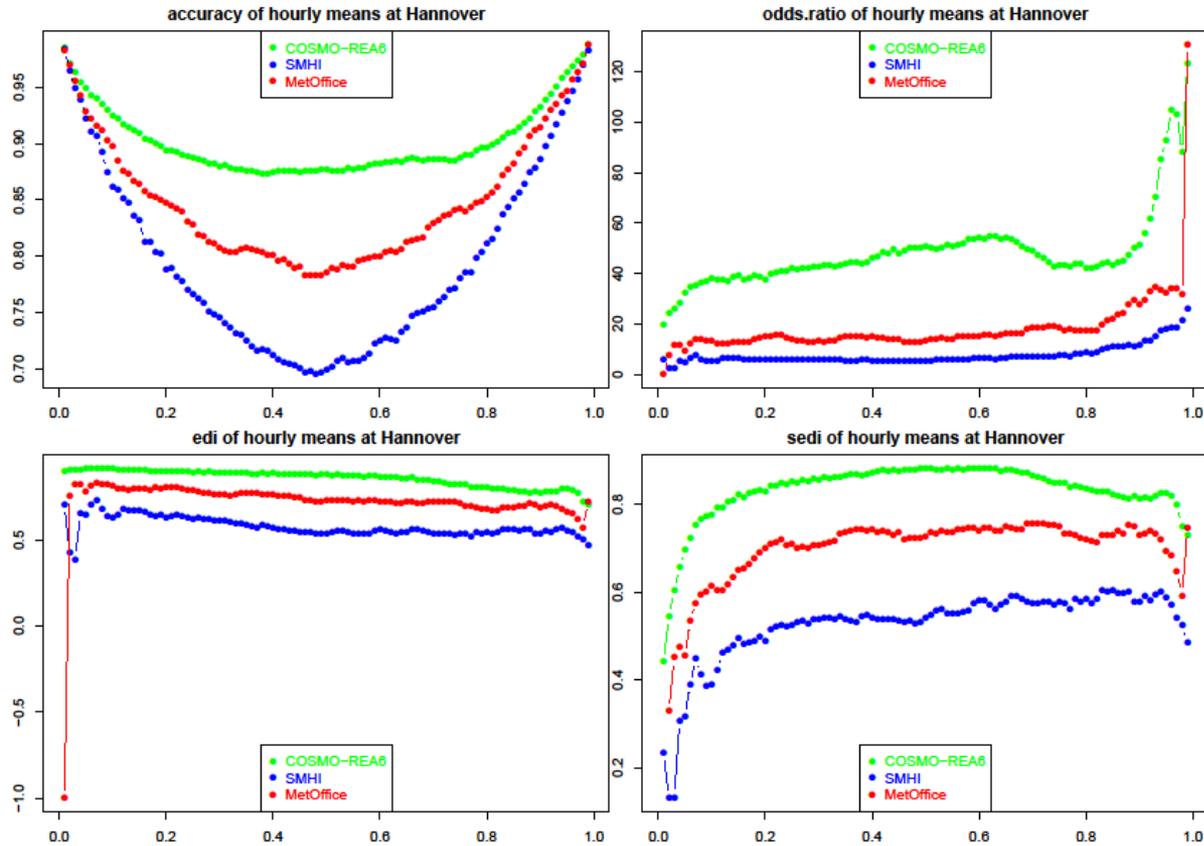


Daily cycle of ERA20C and ERA-I wind speed
at tower location Lindenberg

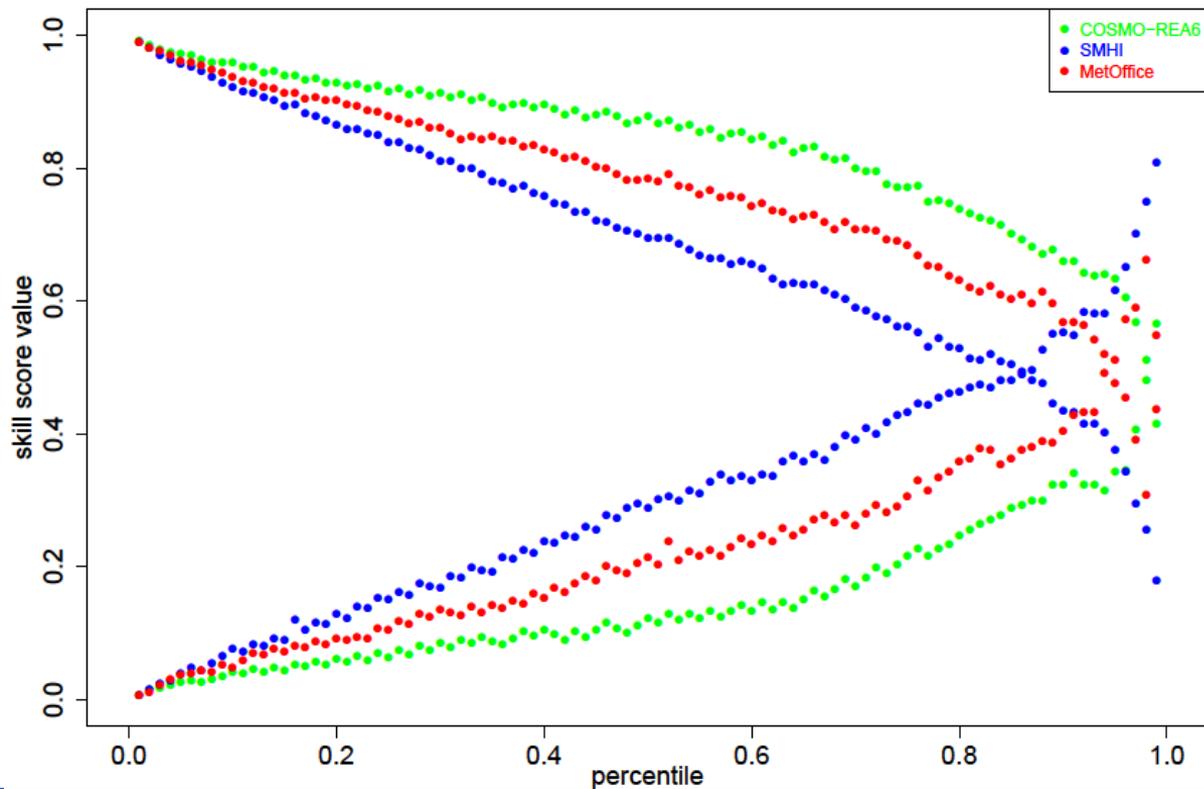








Hit rate vs False alarm ratio of hourly means at Hannover



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>