Geophysical Research Abstracts
Vol. 14, EGU2012-5682, 2012
EGU General Assembly 2012
© Author(s) 2012

REMO poor man's reanalysis

H. Ries, C. Moseley, and A. Haensler
Climate Service Center, Hamburg, Germany (hinnerk.ries@hzg.de, +49 (0)40-226 338-163)

Reanalyses depict the state of the atmosphere as a best fit in space and time of many atmospheric observations in a physically consistent way. By essentially solving the data assimilation problem in a very accurate manner, reanalysis results can be used as reference for model evaluation procedures and as forcing data sets for different model applications.
However, the spatial resolution of the most common and accepted reanalysis data sets (e.g. JRA25, ERA-Interim) ranges from approximately 124 km to 80 km. This resolution is too coarse to simulate certain small scale processes often associated with extreme events. In addition, many models need higher resolved forcing data (e.g. land-surface models, tools for identifying and assessing hydrological extremes).
Therefore we downscaled the ERA-Interim reanalysis over the EURO-CORDEX-Domain for the time period 1989 to 2008 to a horizontal resolution of approximately 12 km. The downscaling is performed by nudging REMO-simulations to lower and lateral boundary conditions of the reanalysis, and by re-initializing the model every 24 hours ("REMO in forecast mode").
In this study the three following questions will be addressed:
1.) Does the REMO poor man's reanalysis meet the needs (accuracy, extreme value distribution) in validation and forcing?
2.) What lessons can be learned about the model used for downscaling?
As REMO is used as a pure downscaling procedure, any systematic deviations from ERA-Interim result from poor process modelling but not from predictability limitations.
3.) How much small scale information generated by the downscaling model is lost with frequent initializations? A comparison to a simulation that is performed in climate mode will be presented.