Earth System
Science
Data

Interactive comment on "High resolution atmospheric reconstruction for Europe 1948–2012: coastDat2" *by* B. Geyer

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Received and published: 27 February 2014

Thanks as well to reviewer 2 for the helpful comments, recommendations, and hints for technical shortcomings. All items together helped very much to improve the paper.

1. For the atmospheric parts of coastDat to different models were used: COSMO-CLM for atmospheric part of coastDat2 and REMO-SN for the atmospheric part of castDat1. It is beyond the scope of this paper to oppose COSMO-CLM to REMO-SN. The reference to coastDat1 was given.

2. "The data of the atmospheric part of coastDat2 (Geyer and Rockel,2013) are downloadable from http://dx.doi.org/10.1594/WDCC/coastDat-2 COSMO-CLM)." Is included in the reviesed version at the end of the paper.

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3. The new start of the chapter is now: 'Beside the meteorological lateral boundary conditions information on climatologically constant data has to be prescribed in the model:' The references to the external data are given by Smiatek et al. (2008).

4. The temporal evolution is shown for total precipitation (former Fig. 11). The given examples are chosen to held the balance between the length of the paper and the aim to give an overview. We agree with the reviewer that more analysis form different time periods would be interesting but are outside of the scope of the present overview paper. The statistical significance on the 0.05% level of the 2m temperature differences was tested separately for the 12 month to avoid autocorrelation. It yields for large regions statistically significant values between observation and CCLM simulation. This result is however not surprising because of inherent model biases of the forcing NCEP1 data. In addition to the bias plots we included based on the suggestion of the reviewer the corresponding correlation between observation and simulation. Here correlations are over large areas statistically significant and the coastDat represent large part of the observed variance.

5. - 7. Are corrected like recommended.

8. TOT_SNOW is deleted from the Table. SSO_GAMMA and SSO_SIGMA are in the upload process of the database CERA now.

9. As the other reviewer explicitly mentioned this figure as helpful and wished to have it in the article itself, not in the appendix, it was moved (now Figure 8a-d). But to meet the recommendation of your review it is explained now.

10. It is hardly possible to summarize were the atmospheric part of coastDat is most comparable to observations and where it has its short comings. This is due on the one hand to high inhomogeneity in space as well in time of the differences and different features for different variables and on the other hand to the shortcomings of the observational data sets.

11. Corrections are in the upload process of the database now.

Technical corrections: All recommendations was followed, except the ones addressing the name of the simulation, namely following three: - page 784, lines 20, 28, page 785, line 9: Please avoid using CCLM (this abbreviation was not introduced), but use the term coastDat2. - Fig. 7: blue should be named coastDat2 instead of COSMO_CLM - Fig. 9: red should be named coastDat2 instead of CCLM

The abbreviation CCLM is introduced now. As in the first version it became not clear enough, that the CCLM-simulation is only the atmospheric part of coastDat2 this fact is more pronounced now. Therefore the substitution of CCLM to coastDat2 is not within the meaning of the authors.