

Interactive comment on “G2DC-PL+ A gridded 2 km daily climate dataset for the union of the Polish territory and the Vistula and Odra basins” by Mikołaj Piniewski et al.

Anonymous Referee #3

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Review of

G2DC-PL+ A gridded 2 km daily climate dataset for the union of the Polish territory and the Vistula and Odra basins by Mikołaj Piniewski, Mateusz Szcześniak, Ignacy Kardel, Somsubhra Chattopadhyay, and Tomasz Berezowski. Submitted to Earth System Science Data

Summary

The manuscript evaluates the new freely available gridded observation dataset (kriging method) for Poland and the Vistula and Odra basins, G2DC-PL+, at 2 km resolution covering 1951-2019, which is an updated and extended version of the 5 km 1951-2013

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CPLFD-GDPT5 data set from the previous CHASE-PL project. Daily precipitation and min and max temperatures are extended to include relative humidity and wind speed, use of more observation stations (approx. doubled for temperature and precipitation) due to new freely available IMGW–PIB climate data and from other sources. Two applications of such datasets are hydrological modelling and bias correction of climate model output. The new data are presented with statistical measures (e.g. from cross-validation) with comparison with the previous dataset of temperature and precipitation.

General comments

In my opinion, the manuscript is a result of solid work with a clear presentation and sufficient level of details. However, although the title of the manuscript is “A gridded 2 km ...”, there is not a single map of the gridded products using classical presentation with isolines or colour shadings in the main manuscripts, but reference to supplementary material in section 4 Consistency with climatic data. In this way there is no visualization for the reader of the spatial details in the final gridded product which can be compared to e.g. station density or terrain. I would not recommend increasing the total number of figures, but would like to see some presentation of e.g. mean values. A combination of the present point station presentation on top, using isolines and/or colour shading as background of mean values, would certainly be possible for temperature, wind speed and relative humidity, while more difficult for precipitation due to the high station density. Additionally, the manuscript should include some discussion of the useful spatial scales of the gridded product (2 km scale for all parameters) in view of the much lower station density for most parameters (except precipitation), see specific comments.

Specific comments

As far as I can see, some improvement of the English grammar is needed in a few places.

Space is missing between 2 words at line number 10, 77, 88, 186.

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Corrections for missing or extra space before or after “,” needed (text search for comma).

Line 23 [refs] needs to be specified.

Line 33 applicatons -> applications

Line 47 remove “ofrange”

Line 65 remove comma+space in “interpolation, .”

Line 77 “will help better constrain hydrological models” rephrase?

Line 82 “kirigging” correct.

Line 91 “evap-o-transpiration” correct.

Line 120 “under-catch” -> “undercatch” for consistent naming in the manuscript..

Line 124 “(Berezowski et al., 2016)” -> “Berezowski et al. (2016)” ?

Line 139-140 I guess that “[-]” means without unit, should in my opinion be modified or removed to avoid confusion for the reader.

2.4 Number of stations. This section or the concluding section should in my opinion be supplemented with some discussion of the useful spatial accuracy of the final 2 km data in relation to the station density for the different parameters.

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