

Interactive comment on “Near real-time adjusted reanalysis forcing data for hydrology” by Peter Berg et al.

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Berg et al provide a method to produce updates to near "real time" of half-degree spatial resolution daily near-surface temperature and precipitation. These data, called GFD, are designed to allow hydrological modelling that is closer to real time than possible via the episodically released datasets such as the WFDEI. Overall this is a good, clearly written paper which should definitely be published. Below I provide a few minor comments that should be addressed followed by small changes to figures and a few very minor text corrections.

Minor comments: 1) Although the authors target updating beyond the current coverage of GPCCv7 precipitation (2013) using GPCC products, in fact datasets such as

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WFDEI already extend to the end of 2015 through the use of the CRU observations of precipitation. Therefore the need for updating is not as severe as implied, especially for Europe where the half-degree resolution GPCC and CRU precipitation totals show good overall matches. Additionally, the post 2013 data (CRU of Rainf_WFDEI_CRU plus Snowf_WFDEI_CRU) could be used within the validation of the new product. The reason why CRU precipitation for 2014 and 2015 has not been utilized should be made clear.

2) The abstract should make it clear that the new product is available at half-degree resolution and for daily precipitation and near-surface air temperature only (other variables provided by the existing datasets, such as downwards shortwave radiation fluxes [suitable for land surface models and global hydrological models] are not provided).

3) The name GFD (Global Forcing Data) is very generic. This name does not convey the fact that only temperature and precipitation are involved nor that the data are updated to near real time. I would suggest a change to something like Current Global Forcing Data to emphasise the value added.

4) The updating methodology is dependent on the availability of ERA Interim products. In the next couple of years ERA Interim will no longer be available and a different reanalysis (ERA-5) will be provided by ECMWF instead. The nature of ERA-5 is such (higher resolution, multiple realizations) that a smooth transition from ERA-Interim to ERA-5 for the GFD is not guaranteed. Some comment on this would be appropriate.

Figure changes: Fig 2 is currently difficult to comprehend. The caption says "Climatological mean (top) precipitation" - the brackets should say "(left)" similarly "and (bottom) temperature" - the brackets should say "(right)". The top row shows absolute means and the colour bars should be provided next to them. The next three rows show differences and the other colour bars should be there. However, the caption says: "the relative difference EI, GFDCL, and WFDEI." This should be changed to "(left) the relative difference in precipitation and (right) absolute difference in temperature." Finally to

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be clear what is shown every panel should have its own heading. For example, panel b should be headed with something like: "100% \times (EI minus GPCCv7)/GPCCv7".

Fig 6 It is noticeable that the authors have been careful to avoid poor colour pallets that could confuse colour-blind readers. However, it is very hard to distinguish the yellow shades as well as the blue shades for the E-HYPE maps. Can the colour scheme be changed to show clearer gradations?

Fig 7 The labelling is misleading. It is far easier for the reader to understand this figure if every panel has a heading of either "Europe" or "Arctic". Also every Y axis should have the evaluation metric indicated for every panel ("Bias", "NSE", "r", "Variability"). The caption should also spell out NSE, r (is this Pearson's or Spearman's?) and what is meant by "variability" (is this standard deviation or variance?).

Minor text corrections: p4 line 14 The word "data" is plural. A dataset (singular) contains a lot of data (plural). Hence in both places on this line change "is" > "are".

p4 line 14 "On notable" > "One notable".

p5 line 33 and p6 line 1 "Priestly" > "Priestley".

p8 line 5 "method overestimate" > "method overestimates".

p8 line 5 "The updating method also produce" > "The updating method also produces".

p8 line 7 "a difference already in the observations" > "a difference in the observations".

p8 line 15-16 "is mainly used interim to bridge" > "is mainly used as an interim measure to bridge".

p10 line 6 "for the first about 90-100" > "for about the first 90-100".

p10 line 11 "which is on a much larger magnitude" > "which is of a much greater magnitude" [note the "of" not "on"].

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