Earth Syst. Sci. Data Discuss., referee comment RC2
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Comment on essd-2021-361

Anonymous Referee #2

Referee comment on "HCPD-CA: high-resolution climate projection dataset in central Asia" by Yuan Qiu et al., Earth Syst. Sci. Data Discuss.,
https://doi.org/10.5194/essd-2021-361-RC2, 2021

Thank the authors and editor for bringing me to this work, the bias-correction method based dynamical downscaling is a totally new technique for me and very interesting. Base on this method, the authors created high resolution historical and projected gridded climate datasets in Central Asia (CA), which are very important and useful to the target region. The manuscript is generally well written and I have only some minor points as following.

1, I suggest to also provide the key geostatic variables from the WRF downscaling for data archive, e.g. topography, soil type, land cover type.

2, Addressing the data quality is very important, especially for a data journal. As a potential user, I expect to see the spacial distribution of biases (those versus CRU, ERA5 and stations), so I can have a basic impression on the accuracy of the data when applied to any sub-region or basin for ecological and hydrological studies. Thus, I recommend to add related figures, but you do not need to deliver in-depth scientific discussions. I also suggest to provide similar figures as figure 8 for other variables instead of only give precipitation as an example. So the readers can directly know the quality of each variable when compared with station observation.

You can add such figures as main content or even as an appendix is acceptable.

Additionally, I suggest to consider topographic elevation difference between WRF simulation and observation (CRU, ERA5, station) during comparison/evaluation, for these three variables: pressure, temperature, relative humidity. Because base on my own experience, this is very important over mountainous/complex-terrain regions.

3, Please clarify the origin of the station data during evaluation.