

The manuscript by Peng et al presents a valuable monthly climatic dataset across China by downscaling CRU data. This dataset has a high spatial resolution and cover a long time period. The evaluations by comparing this dataset with WorldClim data at different spatial resolution et al have demonstrated that the new dataset is reasonable. The analysis of climatology and annual trend further show that the new dataset could be used for investigations related to climate change across China.

Overall, the paper is very well written and the data would be very useful for scientific communities. Here I have some specific suggestions to improve this paper.

Specific Comments

1. In the introduction, it may be useful to mention or introduce ERA5 climate data, which has very high time resolution (hourly data)
2. P6, 3.2 Evaluation criteria. This part focused on the evaluation of original/downscaled dataset. Authors should present a brief description for the evaluation of WorldClim data.
3. P8, L9. Authors introduced the climatic variables for the climatology analysis in the Result section. These introductions should be placed in the Method section.
4. P27, Figure 8. Authors used the 1% and 99% quantiles of monthly temperatures in a year to represent the annual minimum and maximum temperatures. Why didn't use the minimum (maximum) value of monthly minimum (maximum) temperatures in a year to indicate the annual minimum (maximum) temperature? Although they should be the same values as my experience, I think that the later is more widely used.
5. P28, Figure 9. The significance levels in the right column should be integrated into the trends the left column, using recognizable lines. Besides, in the P9 L16, authors have stated the 95% significance level was adopted for the significance. Thus, only the 95% Significance level in the Figure 9 should be presented.
6. Authors should carefully check the typos, such as "WordClim" in P1 L24 25,