We appreciate the Topical Editor for your comments on our manuscript. According to the comments, we have revised the manuscript. Below are our replies with a clear and easy-to-follow sequence: (1) comments from referees, (2) authors' reply (colored by blue), and authors' changes in manuscript (colored by blue, in parentheses, and with line numbers of the revised MS using track changes).

Comments to the author:

This paper produced a high resolution (9 km) climate projection dataset over the Central Asia, which will serve as a scientific basis for assessing the impacts of climate changes for this region. I think this paper can be acceptable for publication after the following minor issues can be addressed:

1.In Fig. 2, the term "WRF sensitive analysis" is easier for readers to understand than those "Multiple combinations of physical schemes" + "WRF" + "Observational data"; and the term "WRF with the optional combination of physical schemes" seems not right, maybe you can describe the term as "WRF with the combinational optimization of physical schemes".

Reply: Fig. 2 is revised, as well as the relevant sentences in the MS.

"Its physical schemes are set based on our previous work about the sensitivity analysis of physical parameterizations in the WRF model for local climate simulations in CA (Wang et al., 2020). Details about the optimal physical schemes are in Qiu et al. (2021)." (L74-77)

"First, a sensitivity analysis of physical parameterizations in the WRF model was done and then we identified the optimal physical parameterizations combination for WRF for regional climate studies over CA. Second, the original GCMs are bias corrected and the bias-corrected GCMs are used to drive the WRF model with the optimal physical schemes." (L136-141)

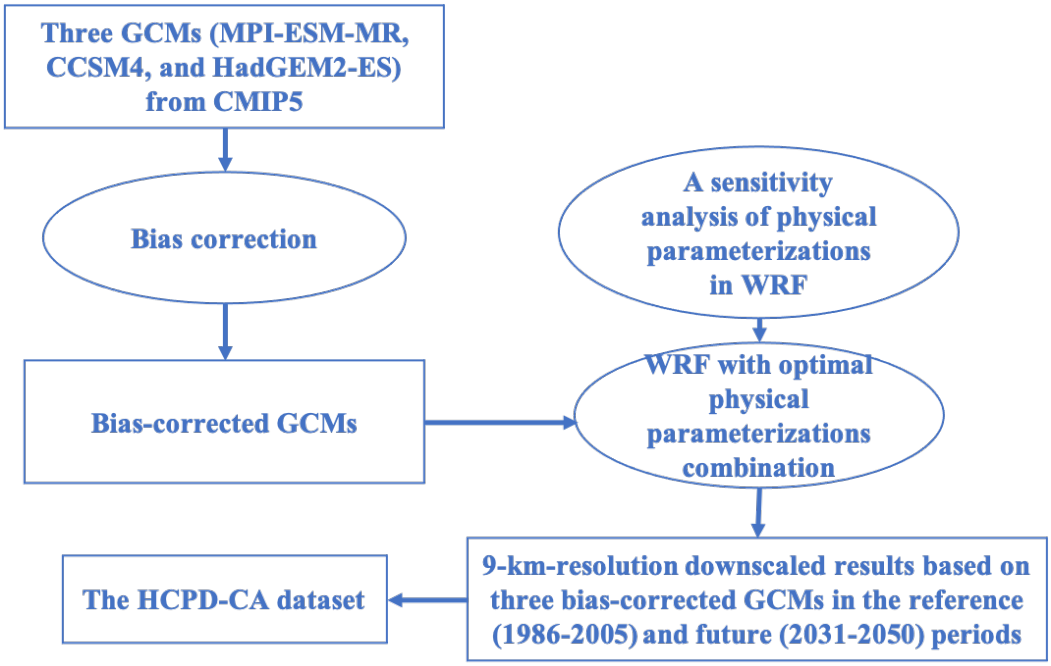

Fig. 2 Flow chart for the HCPD-CA dataset.

2.Since you have put the data in National Tibetan Plateau/Third Pole Environment Data Center, you are welcome to cite the relevant introduction papers into the articles: https://doi.org/10.1175/BAMS-D-21-0004.1 and https://doi.org/10.1175/BAMS-D-19-0280.1

Reply: We added the relevant references.

"The HCPD-CA is hosted at National Tibetan Plateau Data Center (Li et al., 2020;Pan et al., 2021)…" (L257)