

Dear Dr. Käab and Dr. Gruber,

Thank you very much for providing us the opportunity to improve our paper based on the referees' valuable comments. We have revised the manuscript according to your and the reviewers' comments and suggestions. Enclosed please find the revised manuscript, responses to the referees, as well as a list of changes. The responses are marked blue. We hope these revisions have improved our manuscript to make it suitable for publication in "The Cryosphere." If you have any questions or concerns about this paper, please don't hesitate to let me know. We look forward to hearing from you soon. Sincerely yours,

Tingjun Zhang

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The summary of the changes and responses to Referees' comments are listed below. The page, line, and figure numbers refer to our revised manuscript. The changes have been indicated in the paper using bold font.

We thank Dr. Käab for his suggestions of the discussion paper. We have addressed all the comments and made the suggested changes in the revised version of our manuscript. Our point-by-point replies (in blue) to the comments are listed below.

1. Thanks for your detailed response and revisions! I am happy to accept the paper as is, but recommend to include Fig 2, page 19, of the response letter in the paper ("Spatial variability of SFD anomaly for the decades of the 1950s, 1960s, 1970s, 1980s, 1990s, and 2000s, with respect to the 1950–2009 mean across China"). I agree with the referee proposal to include it.

Response: Thanks! We added this figure in the manuscript (figure 8), and changed our figure 7. Meanwhile, we added several sentences in L248-253 (page 9) to describe it.

We thank Dr. Elchin Jafarov for his detailed and insightful review of the revised paper. We have addressed all the comments and made the suggested changes in the revised version of our manuscript. Our point-by-point replies (in blue) to the comments are listed below.

1. L349. Remove second ‘further’.

Response: Thanks! We have deleted it.

2. L 367-378. I felt that there are some redundancies in the paragraph.

Response: Thank you for your suggestion. We have carefully edited this paragraph and hopefully removed some of the wordiness and redundancy.

3. L 381 ... large scale teleconnections. Add a reference.

Response: We added the reference in L388 (page 14) “(Frauenfeld and Zhang, 2011)”.

4. L 420 ... while no systematic relationship is evident with SND. Saying that there is no relationship assumes the independence of SND, when we know that SND significantly affect ground temperatures. Please feel free to choose a better word to finish that sentence.

Response: Yes, we agree with you. We revised this sentence in L425 (page 15) “...SND did not show a significant association.”

5. Figure 4C. Choose different color for -0.008- -0.004 interval

Response: Nice suggestion. We changed it.

6. Figure 8 Combine -1.6- -1.2 and < -1.6 intervals into one.

Response: Ok, we revised it.

7. The relationship of SFD with respect to latitude shows nice correlation both for East and West parts of China. I am leaving that up to the authors to consider that plot in the manuscript.

Response: Thank you for this suggestion. We have added it as figure 10 with some discussion to the manuscript. Please see L272-280 (page 10).