We think that the research of your team is very significant. You have done a very good long-term sequence of surface temperature data sets in China. The data you provide will play a key role in promoting research on the thermal environment at the regional scale, and also many other related disciplines. We read your paper carefully and use your temperature dataset to do a regional-scale thermal environment analysis and find that there is a small problem in the dataset.

Response: We appreciate Dr. Liu for her/his valuable comments and suggestions that helped us to clarify and improve the manuscript. Our point-by-point responses to the Dr. Liu's comments are given as follows.

We have three suggestions:

1.For dataset, not all rows and columns of data are consistent, and the number of rows and columns of 60% data is 724*864, but the number of rows and columns of 40% data is 723*863.This will affect the user's processing and analysis when they use this dataset. This problem should be caused by the software batch process. Please correct the data and re-upload it, which is more conducive to us to promote the use of this dataset. Thanks again.

Response: Thank you for pointing out this key issue. It is important to ensure the consistency of the rows and columns of the dataset as it is the basis for processing and analysis. This problem is due to an error in the process of the batch cutting with a vector. We scrutinized the data and then all the data with 723*863 was reprocessed. In the end, all images are 724*864.

The new version of the datasets were uploaded to the repository: https://doi.org/10.5281/zenodo.3528024. At the same time, all the results in the text have been checked and corrected in the next version of the manuscript.

2. Page 5. Line 155. It will be better if this sentence is revised as "MODIS is a key sensor of Earth Observing System (EOS) program which provides a unified grid product with global coverage of the land, atmosphere and oceans. MODIS covers 36 spectral bands from the visible, near-infrared and thermal infrared ranges (from 0.4 to 14.4 um), so it is extensively used to study global marine, atmospheric, and terrestrial phenomena (Wan et al., 1997)."

Response: Thanks for this constructive comment. The sentence has been revised in the next version of the manuscript.

3. Page 6. Line 175. It will be better if this sentence is revised as: "Then, these day/night pairs of MODIS data are used to construct 14 nonlinear equations to retrieve the surface average emissivity and surface temperature based on a physics-based day/night LST model from the MODIS 1B data without high accuracy atmospheric temperature and water vapor profiles (Wan and Li, 1997)."

Response: Thanks for this constructive comment. The sentence has been revised in the next version of the manuscript.