Review of the manuscript titled "HRLT: A high-resolution (1 day, 1 km) and long-term (1961–2019) gridded dataset for temperature and precipitation across China".

General comments:

This study produced a new daily maximum temperature, minimum temperature, and precipitation dataset spanning 1961-2019 in spatial resolution of 1km in China by various machine learning and traditional methods. The observation data from meteorological stations were used to evaluate this dataset and the other three existing datasets, the result showed this dataset with high accuracy. This study involved huge computation with interpolation, and the method, which will be helpful for similar studies. Overall, the manuscript was well written and easy to follow. The method is very reliable, the dataset is solid and it will have valuable contributions in the fields of ecology, remote sensing, hydrology, and meteorological science. This manuscript and dataset have the potential to be a highly cited work in the future. In my opinion, the MS can be accepted for publication after a medium revision.

Specific comments：

1. For all reference links in the manuscript, the last access date should be added and the font color should be uniform (blue). For the simplicity and clarity of the manuscript, it is recommended to delete the reference links of temperature, precipitation, and meteorological stations in subsection 2.1 (Lines: 88-98), and uniformly use the link: (https://data.cma.cn/, last access: date).

2. There are many grammar problems (such as Line 31: Replace the "is" with "was"; Line 62: Replace the "grid" with "gridded"). Please modify these problems in the manuscript accordingly.

3. Line 30: More than one machine learning method is used in this manuscript, so it is recommended to change "machine learning" to "machine learning methods". This also works for line 80.

4. Figure 1: The legend representation as "Meteorological stations" is more appropriate than "Testing stations".

5. Line 106: The equation should be re-expressed on a new line, such as the equation line 238.

6. Lines 108-110: The expression is not clear, please re-write the sentence. Moreover, you should elaborate on which observed meteorological station data you used.

7. Line 134, please remove repeated "was"

8. Line 142: use the abbreviation TPS for thin-plate-smoothing splines

9. Line 144: Re-write the subheading ("The methods" to "The interpolation methods")

10. Line 147-148: add implemented after used to.

11. Line 153: Remote sensing uses low case R

12. Line 160: Remove repeated "The".

13. Line 324: Remove "for"

14. Figure 2: Please add the full spelling of TWI in the figure comments.

15. Figure 3&5: The values (R2/Mean) appear to be incomplete. please regenerate these figures.

16. Lines 265-268: please try to add the reference.

17. Figure 5&6: Please add the explanation of Min, Max, and Mean in the figure comments.

18. Figure 8b5: There seems to be an extra vertical white line, please delete it.

19. Lines 419-420: Reference missing page number, please add it.

20. Lines 476-480: The year of reference is incorrect. Please modify it