



EGUsphere, referee comment RC2
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Comment on egusphere-2022-211

Anonymous Referee #2

Referee comment on "Spatiotemporal continuous estimates of daily 1-km PM_{2.5} from 2000 to present under the Tracking Air Pollution in China (TAP) framework" by Qingyang Xiao et al., EGU sphere, <https://doi.org/10.5194/egusphere-2022-211-RC2>, 2022

Review of Spatiotemporal continuous estimates of daily 1-km PM_{2.5} from 2000 to present under the Tracking Air Pollution in China (TAP) framework by Xiao et al. 2022

This study derives a high spatial resolution (1 km) PM_{2.5} data from 2000 to the present over China with a range of data sets, built on the authors' previous study/framework. The study also compares several models and predictor combinations. The final open-access 1-km resolution PM_{2.5} product is helpful for the environment and policy-related studies in China. Generally, the manuscript is clearly written but still with room for improvement. The scope and quality of this research are suitable for publication in ACP, subject to the following concerns.

1. The authors may want to articulate what has been improved in this study from their previous TAP studies.
2. It seems the authors did too much data manipulation (e.g., data/variable/model selections, different regressions, several geostatistical methods). How do such selections (and their combinations) alter the results? Please discuss.
3. How would uncertainties introduced by input data, particularly daily satellite data, impact the results. I understand that the ultimate measuring standard is to compare with observations. Nevertheless, could the authors elaborate more on the overall uncertainty of their results?

General editing issues:

1. Please use the Oxford comma to avoid ambiguity.
2. Please fix the citations in the text. For example, "Lyapustin et al., 2011b;Lyapustin et al., 2011a" in Section 2.3 is not correct, should be "Lyapustin et al., 2011a; Lyapustin et al., 2011b". "Huang et al., 2021;Wei et al., 2019;Wei et al., 2020;Wei et al., 2021" in Page 11 is surprisingly sloppy.
3. Variables should be in italics.

Monir comments:

1. Page 1, line 4, change "pollution" to "pollutants".
2. Page 2, line 2 from the bottom, change "temporal continuous" to "temporally continuous".
3. Page 3, some sub-plots and texts are tiny in Figure 2. I suggest the authors simplify this figure.
4. Page 4, We filled ...". Could you please be more specific?
5. Page 5, line 3, what is referred to as an "unreasonable pattern"?
6. Page 9, Figure 2, NDVI is missing from the caption.
7. Page 13, Figure 6, what does a dot mean? A monitoring site?
8. Page 15, Figure 7, please define those variables in the caption: "500hPa", "MLS+W10m", "BLH".