Since this is a revised version, previous reviewers have put forward a lot of comments and the authors have made a lot of efforts to modify the paper. Now the study has been largely improved, but I still have some suggestions for the author's reference:

We thank the reviewer for the helpful comments and efforts towards improving our manuscript.

Abstract: The authors should provide quantitative descriptions of the overall accuracy of PM2.5 estimations in the US using the GWR model.
We have added the quantitative description of the overall accuracy of GWR model.

Introduction: Besides the chemical and statistical regression methods, it is suggested that the authors should summarize recent studies on PM2.5 estimation from MODIS AOD products using the popular artificial intelligence methods (Hu et al., 2017; Li et al., 2017; Wei et al., 2019, 2020, 2021).
We have added the machine learning method in the introduction.

Line 140-141: Reference for ERA5 is needed.

The reference for ERA5 is added.

Line 183: Why only select PM2.5 > 2.0 μm/m3? Any reason? There are a lot of PM2.5 values below 2 μm/m3 in the US (Hu et al., 2017).

The reason for discard PM2.5 is that the established lower detection limit for FRM method is 2 μm/m3 for 2011 (3 μm/m3 for 2018) which is explained in section 2.1.

Line 144-166: How about the precipitation? We know that there is usually a lot of rain in the United States, which can clean the air pollution (Wei et al., 2020).

We added some explanation in the end of section 2.3 stating that precipitation could decrease the PM2.5 concentration but since AOD data is usually invalid when raining, we did not use precipitation as a predictor in this study.

Section 4.2: How about the accuracy of PM2.5 estimates in 2011 since you have compared the results with the year 2018 later?
The results for PM2.5 estimation in 2011 is added in the supplement.

The Figures can be improved, e.g., Figure 3, remove R, and add RMSE;
Figure 4: Units for the legend are missing;
Please add the Y-axis title and unit in Figure 5.
We thank the reviewer for pointing this out. We have corrected figure 3 to figure 5.