The manuscript "Dramatic changes in atmospheric pollution source contributions for a coastal megacity in Northern China from 2011 to 2020" by Baoshuang Liu et al. reports the long-term variations of major air pollutants. By applying a Random Forest method, Theil-Sen regression, and dispersion normalization, the authors separated the contribution of meteorology and that of clean air actions to the air pollution mitigation. I am so sorry that I have uploaded a wrong comment file during the first round of the review. After noticed that, I went through both the original and the revised manuscripts. In general, I think they are well written and provide valuable information to the community. I recommend the publication after some minor revisions. Please noted that my following comments are referring to the revised manuscript.

General comments

1. The authors essentially applied two methods (i.e., RF and VC) to decouple the influence of meteorology. It would be interested to know to which extent the corrected temporal variations agree to each other. Also, it is better to give a short explanation of using VC instead of RF correction for the analysis in Section 3.3 and 3.4.

2. In section 3.3.2, the authors used VC for correcting the meteorological influence on the source apportionment results. How would this be compared with the source apportionment derived from the VC corrected PM concentrations?

Specific comments

Line 102 − 103, Page 4: It is better to give a quantitative description (e.g., AQI or PM2.5 changes) on "greatly improved".

Line 147, Page 6: Are the sampling instruments home-built or commercial? Please also specify the size of the sampling filter and the sampling flow rate.

Line 386 − 389, Page 14: While the enhancement of atmospheric oxidation can certainly cause O3 increase, the strong decrease of NO2 (by almost the same percentage as that of O3 increase) indicating a weakened "NOx titration effect" which may also result in higher O3 levels, especially during cold seasons when photooxidation is usually weak.

Line 416 − 418, Page 15: The unit for VC should be "$m^2\,s^{-1}$".