Atmos. Chem. Phys. Discuss.,
https://doi.org/10.5194/acp-2017-1001-RC1, 2018

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Effectiveness evaluation of temporary emission control action in 2016 winter in Shijiazhuang, China" *by* Baoshuang Liu et al.

Anonymous Referee #1

Received and published: 15 January 2018

This manuscript reports a study that evaluates the effectiveness of temporary emissions controls during 2016 winter in Shijiazhuang, China by utilizing measurements of standard air pollutants' concentrations and filter measurements of concentrations of PM2.5 and its components. The entire study period was divided into four sub-periods: NCANHP, NCAHP, CAHP, ACA. By defining P-heating and P-action as differences in concentrations measured during the certain sub-periods, the authors conclude on the effects of heating and emission controls on the local air quality. The authors also employed PMF for source contribution analyses and conducted backward trajectory and PSCF analysis. Several concerns came from this reviewer: (1) NCAHP and ACA, both are a sub-period of no control plus heating period by nature, why treat the two

sub-periods differently and only include NCAHP in P-heating and P-action definition. Considering NCAHP is only 3 days by definition, and it is at the very start of the heating season, isn't NCAHP a special period against the entire heating season? (2) In PMF results section, there is inconsistency from the previous analyses to report source contribution results only for CAHP and ACA, why left out NCANHP and NCAHP for analysis in source contribution changes? This is where the observations can be somehow directly traced back to the control strategies, it needs a better usage of the materials. (3) PSCF analysis itself is good to weigh relative importance of transported source impacts. However, does the PSCF results help much here to add anything on making the major conclusion, especially on the condition that it doesn't tell anything about the relative importance between the local and transport contributions?

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