

Interactive comment on “Evaluation on the effect of regional joint control measures in changing photochemical transformation: A comprehensive study of the optimization scenario analysis” by L. Li et al.

Anonymous Referee #2

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Review for “Evaluation on the effect of regional joint control measures in changing photochemical transformation: A comprehensive study of the optimization scenario analysis”

This paper investigates the effect of regional control during the 2nd World Internet Conference from December 16 to December 18, 2015. They analyzed the meteorology condition, observed air pollutant concentration, and quantified the effect of air pollution control using numerical models. They found the local emission reduction plays an important role in air quality improvement and suggest that a 48-hr advance pollution

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channel control before the event. Overall, this paper is well-organized and fits into the scope of Atmospheric Chemistry and Physics on the advance understanding of atmospheric chemistry process. I suggest this paper gets accepted with the following minor revisions.

Minor comments:

1. In the model performance section, the author mentioned about the underestimation of the simulated PM_{2.5} concentration compared to the observation. Where are the uncertainties possibly coming from? Knowing this uncertainty in the model, how do we interpret the results (possible uncertainty and limitation in the result)?
2. Some of the figure (Figure 3-7) contents are hard to read, for example, the values on the color bar on the panel (b) and contours on the synoptic maps (a). Moreover, the graph resolution is not consistent in these Figures, especially figure (c). What is the color scale in (c)?
3. Line 153: “GDAS” needs to be defined at its first appearance.
4. Line 201: ... Index of Agreement (IOA). Same apply to Line 209: ... and the IOA value of 0.67 to 0.70.
5. Line 340: “ under static weather condition”
6. Figure 9: what is the unit of the measurement (%)?
7. Figure 11: WS/WD panel has similar information as the PM_{2.5} (top panel) regarding the wind direction. I suggest change the WS/WD panel to wind speed only and use contour lines to represent that.
8. Line 649-652: Please be consistent on the notification, such as SO₂ PM_{2.5}. This occurs in other sections of the manuscript, e.g. line 669-672.

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