Atmos. Chem. Phys. Discuss.,
doi:10.5194/acp-2016-864-RC2, 2016

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Widespread and Persistent Ozone Pollution in Eastern China" *by* Guohui Li et al.

Anonymous Referee #1

Received and published: 8 November 2016

Ozone pollution is an emerging environmental issue in China, especially after the PM level started to decline. This paper analyzes surface measurements of ozone concentrations over 223 cites in Eastern China during 6 months in 2015 and quantitatively reveals the severity of ozone pollution during that period. A special version of WRF-Chem model developed by the authors is employed to investigate the relative contributions to the ozone formation from different sources, such as industry, transportation, residential and biogenic sources. The finding of industry sources as the culprit of the ozone pollution in Eastern China provides guidance on the future emission control strategy for police makers. Hence, I recommend accepting this paper by ACP after the authors address three minor comments below.

1. In Table 2, the comparison of pollutants between 2013 and 2015 shows that implementation of the emission control plan reduced NOx and PM concentrations but

resulted in a even worst O3 pollutions. âĂİSuch a phenomenon is quite interesting and should be highlighted in the abstract and conclusion. Does any satellite observation (such as OMI or TES on Aura) capture such a change of ozone in Eastern China?

2. By turning off each emission source individually in the model, the authors tease out the role of each type of emission. One further question readers may have is what precursor species from each emission source are related to the ozone formation. It would be clearer if major VOC and NOx concentrations could be listed from each sectors in the emission dataset used by the WRF-Chem model.

3. Authors mentioned the possible uncertainty from the simulated meteorological conditions to explain the model biases in reproducing ozone distribution. Would a nudging of surface wind and temperature be helpful to minimize the influence of meteorology?

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-864, 2016.