

Interactive comment on “Significant increase of summertime ozone at Mt. Tai in Central Eastern China: 2003–2015” by L. Sun et al.

Anonymous Referee #1

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General

Sun et al. present a long-term analysis of ozone at Mt. Tai mountain station over the North China Plain in China during 2003–2015. This study focuses on the variation and trend of summertime ozone, and points out that the increased VOC emissions other than changes in meteorology or NO_x emissions are responsible for the elevated summertime ozone at the monitoring site. The manuscript is well structured, the methodology is appropriate and properly conducted, and the conclusion drawn is fully supported by the data presented. It is recommended that this manuscript be accepted after consideration of the few minor comments that follow.

Minor comments

1. P2L10, I don't see any relevance of this sentence to the study. And why the obser-

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uations at Mt. Tai are 'ideal' for evaluating CTMs?

2. P2L23, 'the changing tropospheric O₃' is confusing. Suggest using 'the changes in tropospheric O₃'.

3. P4L16, suggest replacing 'at the site' with 'at this site'.

4. P4L19-20, suggest replacing ';' with '.' and capitalizing the following word.

5. P8L2, what does 'the latter' refer to, 'less O₃ loss' or 'long-range transport of processed regional plumes'? Also, NO₂* peaks around 20:00 p.m. but NO reaches the lowest level around 6:00 a.m., isn't it?

6. P9L10, according to the frequency, no air mass transported from the south in June and more is from the north than the south (29

7. P9L19, again, why does the southern part of central eastern China greatly impact ozone at Mt. Tai?

8. Have you looked at the contribution of stratosphere to troposphere transport to the surface ozone at Mt. Tai?

9. Note a in Table 3 needs to be reformatted.

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