

Interactive comment on “Origin of springtime ozone enhancements in the lower troposphere over Beijing: in situ measurements and model analysis” by J. Huang et al.

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Received and published: 25 March 2015

Thank Referee #2 for very helpful suggestions and comments.

1. "Only one comment to be made with a request for short discussion and references. Stratospheric intrusions are active during the springtime period of the study and can also add what looks like “background” ozone. This is acknowledged in the discussion of Fig 6 in the paper where in April 2005, especially, stratospheric contributions to ozone below 6 km can be very high. However, the possibility should be mentioned in the Introduction to the paper as well..."

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Reply - Indeed. Following Referee #2 and M. Lin’s suggestions, we have added the following text in the literature review: "Note, however, that stratospheric intrusions also maximize at mid-latitudes in spring. Ozonesonde measurements in western North America between 40°N and 55°N in April-May 2006 showed that stratospheric influences can be comparable to impacts of Asian transport (Doughty et al., 2011; Moody et al., 2012). Studies of the sources and variability of LT O3 over China have also emphasized the roles of biomass burning emissions (Liu et al., 1999; Fu et al., 2007; Lin et al., 2009), biogenic emissions (Fu et al., 2007), and the impact of the Asian monsoon system (Liu et al., 2002; Lin et al., 2009)." Relevant references have also been added.

2. "Fix spelling errors. Page 6 – line 10 – ENSCI-ECC not ENSC-ECC Page 29 Suarez in the Rienecker ref."

Reply - Fixed.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 32583, 2014.

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