

Interactive
Comment

***Interactive comment on “Long-term trend of
surface ozone at a regional background station
ineastern China 1991–2006: enhanced variability”
by X. Xu et al.***

Anonymous Referee #1

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This paper presents interesting measurements of ozone from a station in East China during a 16 years period. A main drawback and limitation of the study is that the measurements are highly scattered in time as the time series contains large gaps with no data. Given this limitation, the authors have prepared a clear and well-written paper which in my view are almost ready for publication. I will raise the following remarks, though:

1. When based on scattered data stemming from different instruments and time periods as this, the calibration procedures are crucial. The authors write that the instruments were "carefully calibrated". I would like some more details on this. How was the

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calibration done and how often? Was the field instruments calibrated against a transfer standard, or taken to a lab etc?

2. In sect. 3.3 the authors write that the existence of a diurnal variation in ozone indicates that photochemical formation of ozone is important "...in all seasons". I disagree with this, and think that the diurnal cycle mainly reflects the diurnal variation in the mixing in the boundary layer. This mixing combined with ozone deposition to the surface and/or titration with NO is the most likely cause for the ozone diurnal cycle in my view and doesn't necessarily indicate any local photochemistry taking place.

3. In sect. 3.5 the authors present the results of in-situ NO_x measurements. However, no details are given to these measurements. What kind of NO_x monitoring was carried out? Is there any correlation between NO_x and O₃? Do the data contain NO₂ separately or just NO_x as a sum? More details on this should be included.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 215, 2008.

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