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Atmospheric Chemistry and Physics Discussions

Interactive comment on "The study of emission inventory on anthropogenic air pollutants and VOC species in the Yangtze River Delta region, China" *by* C. Huang et al.

C. Huang et al.

huangc@saes.sh.cn

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SC C13: 'a suggestion maybe not valuable', xinlei Ge, 24 Jan 2011

This is a well written and organized manuscript. It calculated the emissions of SO2, NOx,... and NH3 in YRD region. Since I just finished two papers on the emission and dynamics of amines in the atmosphere, I would like to add something related with NH3: Based on a literature review, typically, that the amines can be emitted from the similar sources as ammonia, like from livestock feeding, sewage treatment, landfills, etc. The

emission flux for methylamines is 2-3 orders lower than NH3. I understand that data for amines might be not available in this region, this information can only be qualitative rather than quantitative. (Perhaps a simple conversion based on the global flux in our work is reasonable?) The second part of our work proves that the tendency of amines to partition into the particle phase is similar to or greater than ammonia.

X. Ge, A. S. Wexler, S. L. Clegg. Atmospheric Environment. 45(2011),524-546. X. Ge, A. S. Wexler, S. L. Clegg. Atmospheric Environment. 45(2011),561-577.

Re: The reviewer's study supplies us a very valuable reference to better understand NH3 emission and its atmospherically-relevant organic compounds. In present, the amines emission status and its thermodynamic properties and gas/particle conversion are still unknown in China. Based on the reviewer's study, amines mainly come from the similar sources with NH3 and its tendency to partition into the particle phase is also similar to or greater than ammonia. It might be another important source for fine particle pollution in China. So we believe it would be meaningful to cite these two papers to give a qualitative guesstimate on the amines emission based on the NH3 emission in the YRD region. However, more future work is needed to fully understand the amines emission and their impacts on fine particles formation in China.

In section 3.2, page 961, lines 27, we would like to insert one sentence: "Based on the studies of Ge et al. (2011), the livestock feeding and N-fertilizer application might also be the most two sources of amines emissions, whose tendency to partition into the particle phase is also similar to or greater than ammonia. However, the true emission level of amines requires more future work in the YRD region."

{Ge, X.L., Wexler, A.S., Clegg, S.L.: Atmospheric amines-Part I. A review. Atmospheric Environment, 45, 524-546, 2011. Ge, X.L., Wexler, A.S., Clegg, S.L.: Atmospheric amines-Part II. Thermodynamic properties and gas/particle partitioning. Atmospheric Environment, 45, 561-577, 2011.}

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 951, 2011.