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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Development and uncertainty analysis of a high-resolution NH_3 emissions inventory and its implications with precipitation over the Pearl River Delta region, China" *by* J. Y. Zheng et al.

Anonymous Referee #2

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This work presents 2006 NH3 emission inventory for PRD region and then compared the NH3 emission trends with precipitation chemistry. Ammonia is one of the key precursors of secondary aerosols and this work is within the scope of Atmospheric Chemistry and Physics. I would recommend publication after following major comments were addressed.

The relationship between NH3 emissions and precipitation chemistry needs further examination. The correlations presented in Fig. 11-14 are plausible but may not pass statistical significance examination. I suggest the authors dig more on their data and

consider further validation of their inventory, e.g., TES ammonia observations, etc.

I couldn't understand how monthly variations of emissions were developed. It should be well documented in Sect. 2 as seasonality is one of top interests on NH3 emissions.

Sect. 2.5 is too general to me. It only contains conceptional description. I would see more details in uncertainty analysis, e.g., CV and distribution of key parameters.

Finally, I would draw authors' attention to the following in press paper, which may be relevant to their work.

Huang, X., Y. Song, M. Li, J. Li, Q. Huo, X. Cai, Z. Tong, and H. Zhang (2012), A high-resolution ammonia emission inventory in China, Global Biogeochem. Cycles, doi:10.1029/2011GB004161, in press.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 33733, 2011.