

## ***Interactive comment on “Occurrence of gas phase ammonia in the area of Beijing (China)” by A. Ianniello et al.***

**Anonymous Referee #2**

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General comments: The experimental work of NH<sub>3</sub> measuring is very seriously and well described. This results are very interesting and are very usefully e.g. for modellers to evaluate their results and so on. There are some problems, however, with the manifold attempts to declare the experimental results. These explanations are often not very good reasoned. Because the complex relations between emissions (biogenic and anthropogenic), transport, transformation (especially gas to particle conversion), deposition etc. for gaseous compounds (here first of all ammonia) and particulate matter, these relations can not explained by knowledge of some concentrations and some meteorological aspects. To this, simulations are necessary with a state of the art atmospheric-chemical-transport-model. A special problem of the paper is first of all, that only two short episodes are investigated, one in summer and one in winter. So we have no statistically significant and robust results for discussion. One can accept the

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author's conclusion: 1) The NH<sub>3</sub> concentrations showed regular seasonal variations, having significantly higher summertime concentrations. The seasonal trends seemed to be largely dominated by air temperature. The following conclusions are valid but their explanations are not well reasoned by the experimental results: 2) The NH<sub>3</sub> concentrations didn't show any diurnal variation in both winter and summer seasons. 3) The effects of wind direction and of the atmospheric mixing on the NH<sub>3</sub> concentrations were the two most significant meteorological parameters. The NH<sub>3</sub> concentrations were slightly affected by wind speed. 4) Moderate correlations were obtained between NH<sub>3</sub> and gas pollutants, such as NO<sub>x</sub> and CO, indicating an influence by traffic emissions. Before publication these conclusions must be better reasoned (if possible?) or the paper should be concentrated on the experimental results and only make a few educated guesses.

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