

## ***Interactive comment on “Five-year record of atmospheric precipitation chemistry in urban Beijing, China” by F. Yang et al.***

**Anonymous Referee #3**

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With the rapid economy development and huge energy use in China, the ambient environment quality and its adverse effects in the large cities such as Beijing have received great concerns owing to the densely populated areas and intensive anthropogenic activities. In this manuscript, the authors have attempted to investigate the chemical compositions and their temporal variations in the precipitations over five years in urban Beijing and to explore the possible mechanisms influencing their trends. It provides comprehensive datasets and valuable information on the precipitation chemistry in Beijing. Their results with detailed analysis of temporal trends in the chemical composition, acidifying and neutralizing potentials are of great significance for better understanding the characteristics of precipitation chemistry in the background of heavy loadings of precursors and varying source emissions balanced by soaring economic growth and strengthened air pollution control in the capital city of China. In general, this paper is

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well written and organized. This reviewer believes that it is of the interest of ACPD, and recommends it to be accepted for publication with minor revisions in response to the following comments.

Specific comments:

1)P28098 L2: it is better to change “from March 2001 through August 2005” into “from March 2001 to August 2005”.

2)P28102 L13-14: If possible, it is better to compare the authors’ annual precipitation volume with those reported by the local Beijing Meteorological Bureau or EPB, which can be a well reference of spatial difference of precipitation within Beijing.

3)P28102 L17-L18: the original expression should be given firstly before the simplified name of “VWM EC “.

4)P28102 L13: it is better to change “Total precipitation amount” into “Annual total precipitation amount”.

5)P28102 L17: the words for the simplified form “VWM” should be given when it first appears.

6)P28103 L13: it is better to change “and averaged at” into “with an average of”.

7)P28104 L7-9: a reference or the method about how to calculate non-sea salt and non-sea salt should be given?

8)P28104 L8: the definite article is better to be added before “total calcium”.

9)P28104 L13-14: it is better to change “Compared to the long-term observation at 9 sampling sites in the Tokyo Metropolitan with precipitation pH of 4.5 during June 1990–May 2002” into “Compared to the long-term observation during June 1990–May 2002 at 9 sampling sites in the Tokyo Metropolitan with severe acid precipitation”.

10)P28107 L17-18: it is better to give out the details and the source reference of SO2

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and NO<sub>2</sub> concentration decrease.

11)P28107 PL20-21 and P28110 L22: maybe it is not appropriate to conclude a “substantial” decrease on NO<sub>2</sub> concentration during the past decade, please check it.

12)P28109 L18: it is better to change “and averaged at” into “with an average of”.

13)P28110 L2: it is better to change “from March 2001 through August 2005” into “from March 2001 to August 2005”.

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Interactive comment on Atmos. Chem. Phys. Discuss., 11, 28097, 2011.

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