

## ***Interactive comment on “An inter-laboratory comparison of aerosol inorganic ion measurements by Ion Chromatography: implications for aerosol pH estimate” by Jingsha Xu et al.***

**Anonymous Referee #2**

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The authors conduct an inter-laboratory comparison of off-line aerosol inorganic ion measurement by IC and show the measurement uncertainty of inorganic ions from different labs, as well as the influence of uncertainty in measuring WSII on the pH calculation. Generally, it is an interesting work to show us how important the QA/QC is. But more deep analysis is needed before it can be published in AMT.

1. My 1st concern is that the authors used large space to show the differences in the WSIs measurement, but did not discuss on the possible reasons.

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2. The calculation of aerosol pH using ISORROPIA-II is dependent on gas-phase NH<sub>3</sub> too much, which is not an easy species to measure. For most cases, especially measurement based on filter sampling, NH<sub>3</sub> would not be measured simultaneously.

3. Fig. 6: There were 5 of the 8 samples showed a pH higher than 7. It is, to me, a bit too high. According to my best knowledge, except for dust samples, the pH of most aerosols should be lower than 7. Did the authors measure the pH of sample solutions before IC measurement? Were the 5 samples alkaline?

4. Since the same concentration of NH<sub>3</sub> was used in ISORROPIA-II to estimate the pH of aerosol, I somehow doubt the similarity of estimated pH among different labs were due to the same input of gas-phase NH<sub>3</sub> (As mentioned in comment 2).

5. Section 3.2.3: I don't think this part is relevant to the topic of this work. Suggest to omit it. 6. Similar to the last comment, I don't understand why the authors make a comparison with ACSM. It is a bit out of the scope of this work.

7. The figure quality needs to be improved.

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