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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Fog composition at Baengnyeong Island in the Eastern Yellow Sea: detecting markers of aqueous atmospheric oxidations" *by* A. J. Boris et al.

Anonymous Referee #2

Received and published: 14 October 2015

General Comments:

This manuscript reports measurements of chemical composition of fog water at Baengnyeong Island in the Yellow Sea. It provides a very rich set of measurements of fog water chemical composition in a region where fewer field measurements are available. The paper shows evidence that strongly suggest aqueous phase oxidation of organics upwind of the island, thereby, providing insight into the atmospheric chemical processing in this specific region. The chemical components of the fog water measured in this study indicate that the samples were influenced by emissions from anthropogenic activities, marine background and forest fires. The most domi-

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nant chemical species measured, ammonium, showed no correlation to wind direction at the measurement site, indicating long-range transport. The concentration of S(IV) was low relative to SO42-, which suggests that oxidation may have occurred upwind of BYI. I think this article is written clearly with easy to interpret plots. I recommend this manuscript for publications, although I suggest a few minor revisions.

Specific Comments:

1. Page 24881, Line 7: Could include more recent measurements of cloud water composition over the Eastern Pacific in the references here - Z. Wang, A. Sorooshian, G. Prabhakar, M. M. Coggon and H. H. Jonsson (2014): Impact of emissions from shipping, land, and the ocean on stratocumulus cloud water elemental composition during the 2011 E-PEACE Field Campaign, Atmospheric Environment, doi:10.1016/j.atmosenv.2014.01.020

2. Page 24884, Line 20: Are the r-squares reported here (and elsewhere in the paper) statistically significant?

3. References Missing: Page 24874, Line 24-25: Kim et al., 2011 Page 24875, Line 13: Yoo et al., 2010

4. Figure 2: Interpretation of the map would be easier if it included more labels.

Technical Corrections: Page 2, Line 10: There should be a comma before the word gradient for clarity. Page 24877, Line 24: Please explain the abbreviation CSU

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 24871, 2015.