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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Aerosol composition and variability in the Baltimore–Washington, DC region" *by* A. J. Beyersdorf et al.

Anonymous Referee #3

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General Comments

This study characterizes the links between aerosol composition, loading, ambient RH, and optical properties in the Baltimore-Washington phase of the DISCOVER-AQ study. This is a very rich data set, and the analyses carried out are appropriate and impactful. The manuscript is well organized, and the writing is clear. I recommend it for publication after the following minor comments are addressed:

Specific Comments

- Echoing one of the other reviewer comments, the title could be improved to better reflect the actual nature of the paper.
- Pg. 23319, line 1: specify what is meant by 'aerosol loading' (mass loading, aerosol

extinction. . .)
- Pg. 23324, line 6-7: it is quite common, but provide basic details of ion chromatographic analysis
- Pg. 23326, line 21: refer here to Equation 5
- Pg. 23327, line 13-16: Delete 'To a first approximation' and replace 'showing' with 'suggesting'
- Pg. 23331, line 18-19: I don't see this information conveyed in Fig. 11?

Technical Corrections
- Pg. 23319, line 2: ". . .for 88
- Pg. 23325, line 29: should be ammonium to sulfate molar ratio
- Pg. 23333, line 7: Brock et al., 2015 does not appear as a reference

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 23317, 2015.