

Interactive comment on “Flow climatology for physicochemical properties of dichotomous aerosol over the western North Atlantic Ocean at Bermuda” by J. L. Moody et al.

Anonymous Referee #2

Received and published: 1 November 2013

The manuscript by Moody et al. is a well written paper summarizing 3-yr long observations of aerosol composition and optical properties in Bermuda. The authors have performed a comprehensive analysis on the relations of aerosol composition and flow climatology and also placed the observations in the context of previous measurements in the Atlantic. The analysis is valuable for the community and I recommend publishing the manuscript after the following concerns are addressed: 1. P. 22402, line 7- the term 'light absorbing carbon' includes BC and BrC (brown carbon); I'd recommend removing this terminology for BC. 2. Why are the mass scattering and absorptions efficiencies calculated with only the mass of SO₄? Why not consider total mass when making the

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scatter plots of scattering or use mass of EC or dust when considering absorption? 3. P. 22410, line 13: supermicron nitrate concentrations appear to have been high (even higher than supermicron nss sulfate) and should be mentioned among the other compounds contributing to scattering. 4. The paper is rather a long manuscript and some of the data presented in figures and tables are repetitive. I recommend removing Table 4, especially considering that these efficiencies are based on scattering vs. sulfate mass only. Data in Tables 2-3 and 5 also can be included in supplementary.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 22383, 2013.