

# ***Interactive comment on “Investigating the sources and atmospheric processing of fine particles from Asia and the Northwestern United States measured during INTExB” by R. E. Peltier et al.***

**A. Sorooshian**

armin@caltech.edu

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This paper provides a good summary of measurements taken during the INTEx-B field campaign, with a focus on aerosol chemistry. A strong point of this manuscript is that there is a large amount of attention paid to the experimental methods, uncertainties, and statistics. I urge the authors to consider some additional points:

Figure 3: It would be interesting to note on how the ammonium to sulfate molar ratio varied with altitude in addition to the WSOC:sulfate ratio (is there any relationship?).

Page 17443, Line 20-27: Were these areas cloud-free during the time of sampling?

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Page 17446, Line 23-30 and Page 17452, Line 17-25: In order to strengthen the argument for in-cloud SOA production, the authors should refer to some studies which have provided evidence with aircraft measurements, as compared to modeling and laboratory studies. Recent papers by Sorooshian et al. including (2006, J. Geophys. Res.; 2007, Environ. Sci. Technol.) have shown that not only is SOA produced efficiently in clouds, but that there are frequently higher levels of SOA above cloud as compared to below cloud from cloud processing. This ties in with the Heald et al. papers. Yu et al. (2005, Environ. Sci. Technol.) and Crahan et al. (2004, Atmos. Environ.) showed that oxalate and sulfate are correlated in the atmosphere and provided evidence for oxalic acid production in marine clouds, respectively.

Crahan et al. (2004). An Exploration of Aqueous Oxalic Acid Production in the Coastal Marine Atmosphere, Atmos. Environ. 38, 3757-3764.

Sorooshian et al. (2006). Oxalic Acid in Clear and Cloudy Atmospheres: Analysis of Data from International Consortium for Atmospheric Research on Transport and Transformation 2004, J. Geophys. Res. 111, D23S45, doi:10.1029/2005JD006880.

Sorooshian et al. (2007). On the Source of Organic Acid Aerosol Layers Above Clouds, Environ. Sci. Technol. 41(13), 4647-4654.

Yu et al. (2005). When Aerosol Sulfate Goes Up, so does Oxalate: Implication for the Formation Mechanisms of Oxalate, Environ. Sci. Technol. 39, 128-133.

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