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Interactive comment on “Highly time-resolved chemical characterization of atmospheric fine particles during 2010 Shanghai World Expo” by X.-F. Huang et al.

Anonymous Referee #2

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The paper represents the characteristics of atmospheric fine particles during the 2010 Expo in Shanghai. Results of different chemical in submicron aerosol such as sulfate, organic, nitrate, BC etc are investigated using HR-ToF-AMS and SP2. This paper shows valuable data from a polluted region and the effects of air mass on aerosol characterization also was discussed. I recommend this paper to be published in the journal.

There are some specific comments for authors:

1. “2.2. HR-ToF-AMS operation and data processing”, Could the author give the size diameter for NH_4NO_3 are mentioned for PSL? 2. “2.3. SP2 operation and data pro-

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cessing”, SP2 was set at 30 ml min⁻¹. Compared to the suggested flow, the set flow is low. How stable that flow is? 3. “2.3. SP2 operation and data processing”, The volume-equivalent diameters of individual BC particles can be derived from the measured BC mass by assuming a density. Please give the density which was used for this paper. 4. Page 9: “ which can be used as an empirical factor to convert organic carbon mass to organic matter mass in future filter-based aerosol studies in Shanghai.”. During this month campaign, how about the variation of this OM/OC ratio. It would be better to give out the mean and standard deviation. 5. Page 11: The diurnal variation of SO₄ is little variation. Which is different from results from Beijing, etc, please give some explanation. Since Sulfate is also a photochemical reaction products. 6. Figure 1a: the PM₁ mass and SMPS volume is correlated very well, but the ratio of PM₁ mass to SMPS volume (estimated density) is about 2.5 by the naked eyes. The ratio is too high. Could the authors give more explanation? 7. Figure 4d Nork City, is that New York City?

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 1093, 2012.

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