

Interactive comment on “The Pasadena Aerosol Characterization Observatory (PACO): chemical and physical analysis of the Western Los Angeles Basin aerosol” by S. P. Hersey et al.

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This great paper provides very wealthy information of measurements on aerosol characterization by using various instruments and techniques, and the analysis of those data is also great.

I am very interested in the presence of amines in the particle since i just finished a piece of work on amines, i have a couple of questions (may not valuable)

(1)It is indeed possible that long-chain amines can be present in the particle phase based on our review (Ge et al., Atmos. Environ., 2011,45,524-546.). And those long-chain amines also have low vapor pressure that possibly favor their partitioning into the

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particle phase (Ge et al., Atmos. Environ., 2011,45,561-577.).

I am wondering if presence of long chain amines in the particle is possible, is it possible to identify some high molecular nitrogen-containing ions in the high m/z range of AMS spectra?

(2)Amino compounds had been identified in the Pasadena aerosols early in 1970s (Novakov et al., 1972, Journal of Colloid and interface Science, 39, 225-234), probably the first evidence of the particle presence of amino compounds based on our review.

(3)Is PMF be able to separate a factor rich in Nitrogen? (a factor with a relative high N/C ratio?). recently, Sun et al. (Atmos. Chem. Phys., 11, 1581–1602, 2011) identified a nitrogen-enriched OA factor from NYC aerosols (5.8% OA, 39% CxHYNp signal). I understand this might be difficult if the amines are with long-chain iijLin high m/z rangeiijL', and the mass fraction is low.

(4)It is a bit strange to me, that a hot, dry regime III is possibly rich in amines, since probably a wet and cold conditions should favor the partitioning of amines into the particle phase based on our thermodynamic estimations (Ge et al., Atmos. Environ., 2011,45,561-577.). Very recently, Rehbein et al.(Environ. Sci. Technol. dx.doi.org/10.1021/es1042113) also observed the similar condition for presence of TMA.

Of course, if the particles are rich in long-chain and high molecular amines, this will be different.

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Best Regards