Supporting online material for

Origins and composition of fine atmospheric carbonaceous aerosol in the Sierra Nevada Mountains, California

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This pdf includes:

Figs. S1 to S4

Figure S1. Regression of OOA versus acetonitrile separated into the hot and cold periods. This plot illustrates the good correlation during the hot period and this slope was used to estimate the likely biomass burning contribution (BBOA) to OA from the acetonitrile measurements. The lack of correlation during the cold period (inset) indicates that biomass burning was likely not an important source of OA in the cold period.
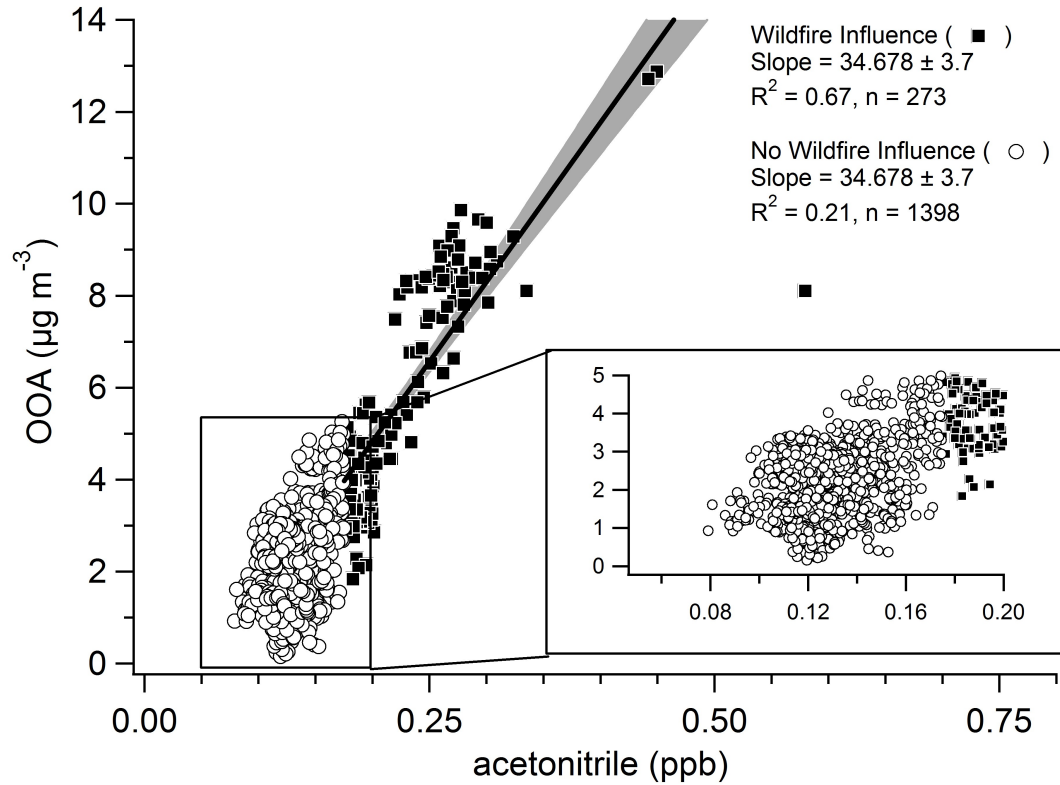
Figure S2. Comparison of organic carbon (μg C m^{-3}) measured by the AMS and the high volume filters. X-axis error bars represent the standard deviation in the averaged AMS data and y-axis error bars are the total uncertainty in the filter organic carbon measurements.
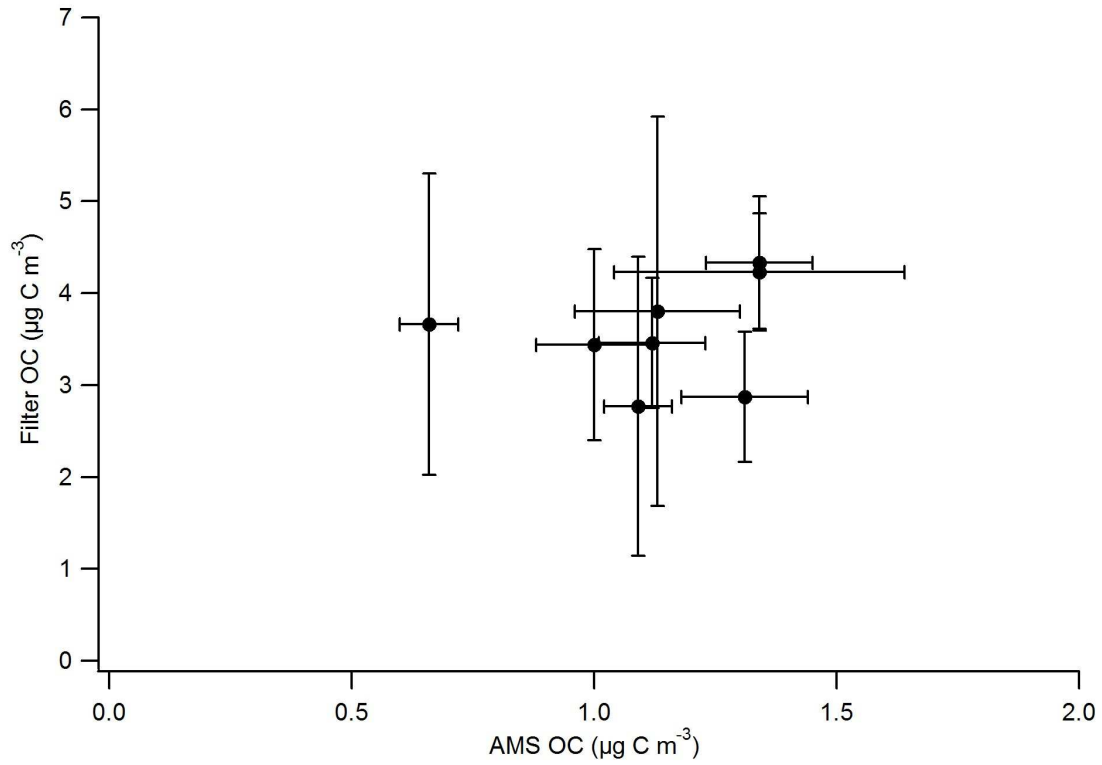
Figure S3.   Correlation of CO to isopentane (a tracer for mobile combustion emissions) during both meterological periods at BEARPEX. The CO data was filtered by windspeeds > 1 m/s to remove generator spikes that influenced the site under stagnant conditions and for acetonitrile concentrations > 0.175 ppb to remove the influence of biomass burning. The emission ratio in the Sacramento, the source region, (labeled 'fresh') was calculated from isopentane measurements made in the summer of 2001 at Granite Bay and from CO measurements from the California Air Resources Board Del Paso Manor monitoring station (http://www.arb.ca.gov/aqd/aqdcd/aqdcddld.htm) (see Murphy et al., 2007) assuming a background CO concentration of 75 ppb. The best fit ratio following aging and dilution during advection to Blodgett Forest (solid line labeled 'Blodgett Forest') was calculated using the reported OH loss rates of isopentane and CO (Atkinson and Arey, 2003; Atkinson et al., 2006), an average OH concentration for the transect and the fraction of the air mass arriving at Blodgett that originated in the urban core (~ 32 %) (Dillon et al., 2002).
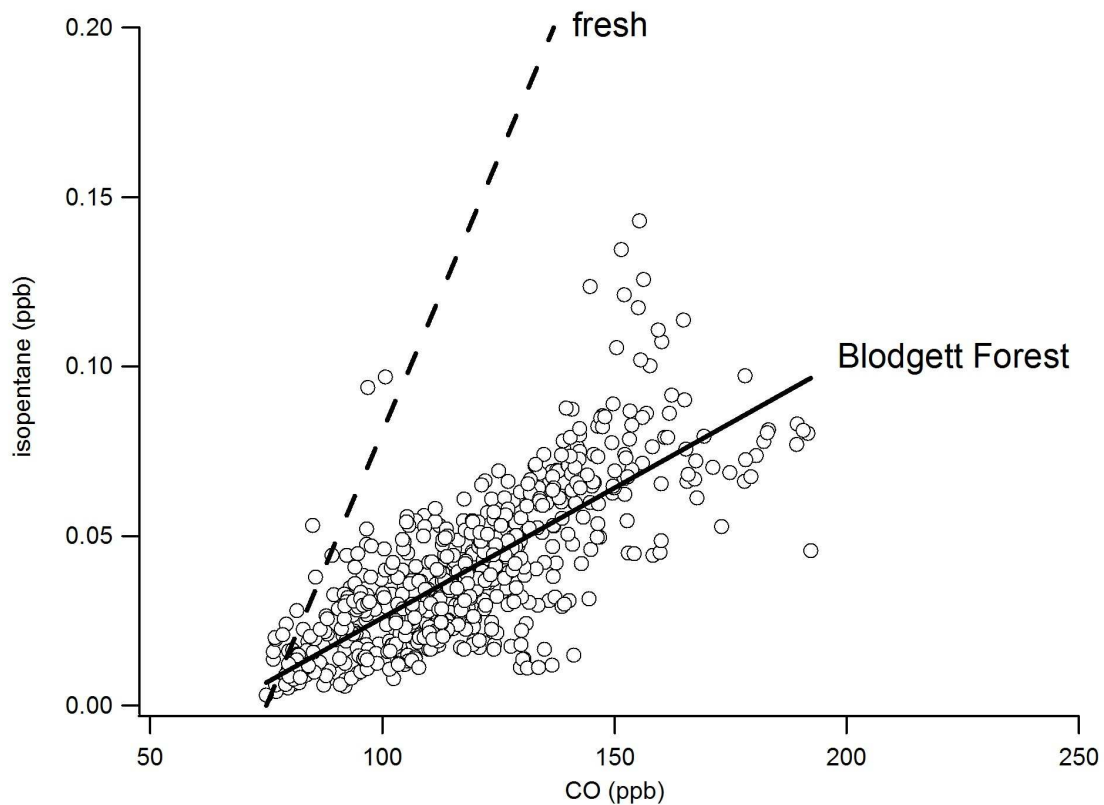
Figure S4. Intercomparison of the IEPOX organosulfate concentrations measured at the University of Aarhus and Caltech.