

Interactive comment on “Seasonal variations of the Water Soluble Organic Carbon massfraction of aerosol in two valleys of the French Alps” by J.-L. Jaffrezo et al.

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Cloud processing can be an important route of formation of DCA. We have conducted size distribution measurements of simple DCA using a MOUDI in Hong Kong and Beijing. In Hong Kong, sulfate aerosols are not completely neutralized because of the relatively low concentration of ammonia. We observed oxalate and malonate in the droplet mode but malonate was sometimes observed in the coarse mode. The observation of droplet mode oxalate (and sulfate) suggested that cloud processing was important and the observation was independent of season. We also found that cloud

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processing was also an important process to form DCA in summer in Beijing. However, because of the high concentrations, sulfate particles were completely neutralized and gas-aerosol re-partitioning to form coarse mode oxalate and malonate was not significant. In spring in Beijing, cloud processes were not important due to the very dry weather ($RH < 60\%$); the droplet mode of oxalate (at 0.7 μm) was absent. Instead, bimodal size distributions of oxalate of at 0.5 μm and 0.2 μm were observed in submicron particles.

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