



Global impacts of multiphase oxalate production

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Fine mode atmospheric aerosols are dominated by the organic fraction. A large fraction of these organic compounds consists of oxalates and carboxylic acids. Some of these compounds are produced in the gas phase and then subsequently partition into aerosol particles whereas others are produced directly in the aqueous phase in either cloud droplets or deliquesced aerosol particles.

In this study we investigate the contribution of oxalates to the global organic aerosol burden using a comprehensive atmospheric chemistry general circulation model including explicit multiphase chemistry schemes for clouds and aerosols. For that purpose the aqueous phase chemistry has been augmented by a mechanism for oxalates, combined with a consistent gas phase chemistry of corresponding oxidation products from isoprene degradation. Using these tools we will present an analysis of both budget and transport estimates which provide indications for the climate impact of these compounds.