



Hourly-resolved chemical mass balance of fine aerosols (PM2.5) in Paris (France) during summertime: First results of the EU-FP7-MEGAPOLI program.

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Within the EU-FP7-MEGAPOLI program, an intensive field experiment has been performed in the region of Paris (France) during a 1-month period of the summer 2009. Fast measurements of the chemical composition of fine aerosols (PM2.5) were obtained in Paris using 1) a Particle-into-liquid-sampler (PILS) coupled with Ion chromatography (IC) for the quantitative determination of the major ions (Cl⁻, NO₃⁻, SO₄²⁻, Na⁺, NH₄⁺, K⁺, Mg²⁺; Ca²⁺), 2) an OCEC sunset field instrument for the measurement of EC and OC, and 3) a PILS coupled with a total Organic Carbon (TOC) for the determination of WSOC. Hourly reconstruction of PM2.5 was performed and compared with field measurements of artefact-free PM2.5 performed by TEOM-FDMS.

Long-range transported Supermicron Sea salts have shown to affect the levels of fine aerosols during the periods with clean air masses originating from the Atlantic Ocean. Most of the nitrate aerosols observed during this campaign could also be associated with supermicron aerosols. Very homogeneous concentrations of ion species were observed in the region of Paris suggesting a non local origin for these species. Properties of organic aerosols were inferred using time resolved measurements of EC, OC, WSOC and oxalate.