ORGANIC ACIDS IN TROPOSPHERIC AEROSOLS

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Organic carbonaceous material is a main constituent of atmospheric particles. Still the specification of the main part is lacking. As one of the main classes of species, dicarboxylic acids are known to be abundant in most atmospheric aerosol types and account typically 0.1 to more than 1 % of total particle mass. Nevertheless origin and fate are still unclear. In this study the aerosol of several sources as motor vehicles, oil and gas fired power plants and coal fired domestic heating has been analysed for dicarboxylic and hydroxylated dicarboxylic acids. Moreover, atmospheric concentrations and size distributions of these acids have been intensively studied during several field campaigns in Europe (ACE-2, MINT, RAPS, LACE). Atmospheric concentrations were com-parable for most experiments, despite clean Atlantic air masses, which show significantly lower values. But even highly polluted air masses characterized in November 1997 in eastern Germany (MINT) show low values for dicarboxylic acids, although the total carbon concentration was the highest of all experiments. This fact, and the observation that none of the above mentioned sources emits significant amounts of dicarboxylic acids leads to the conclusion, that these species are photochemically produced in the atmosphere.

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