



Mobile Measurements of the Particle Chemistry in the highly polluted City of Milan

S. Weimer (1,2), V. Lanz (2), R. Chirico (2), M. Mohr (1), and A.S.H. Prevot (2)

(1) Internal Combustion Engines Laboratory, Empa, Dübendorf, Switzerland, (2) Laboratory of Atmospheric Chemistry, PSI, Villigen, Switzerland (silke.weimer@empa.ch / Fax: +41 44 823 4041/ Phone: +41 44 823 4927)

For the assessment and understanding of the atmospheric processes information on the properties of the particle physics and chemistry are needed.

Particle characterization studies are being conducted at many places in the world, especially in cities.

For the information of the temporal resolution measurement sites are usually being utilized. However, mobile measurements allow to determine real-world and quantitative measurements at locations where stationary measurements are absent.

In summer 2007 mobile measurements were performed in Milan which is the second largest city in the Po basin in Italy, which is one of the most polluted regions in Europe.

The mobile laboratory of the Paul Scherrer Institut was used to study the physical properties of the aerosol particles as well as the chemical composition from volatile and semi-volatile particles components using an Aerodyne Aerosol Mass Spectrometer.

First results show that the impact of traffic is enormous. The organic mass concentration increased rapidly with time from 6:00 to 10:00 in the morning. The fraction of elemental carbon to total concentration was found to be above 30 % which was also seen for mobile investigations in Zurich. However, this fraction changed tremendously depending on the position (i.e. residential area, main street etc.).

Changes in mass spectral pattern of organic aerosol depending on parameters such as

position, time and meteorological conditions will be shown and discussed.