Contribution ID: **3** Type: **not specified**

Determination of Air Pollution Sources by Aethalometer measurements of aerosol light absorption

We have measured carbonaceous aerosols in seven Slovenian and Austrian sites during 3 consecutive winters. The concentrations of Black Carbon (BC) –a primary pollutant, are determined by the Aethalometers from the absorption of light in aerosols, and we can identify BC sources from the wavelength dependence of light absorption. During the intensive campaign in winter 2011 we conducted additional measurements to verify our source apportionment model and extend the source apportionment to all carbonaceous matter. The most important contribution to BC concentrations comes from traffic, with a smaller contribution from wood burning. The contribution of wood combustion to carbonaceous matter is larger than the contribution of traffic in all sites, because the emissions of organic carbon, associated with wood burning are large and the contribution of secondary aerosols to wood smoke may be larger than the primary emissions. The comparison of measurement site pairs (urban, background) reveals that the traffic is a local polluter, while wood burning is a regional one. Traffic restrictions will reduce city concentrations, while abatement measures for reduction of wood smoke must be planned and implemented regionally.

Working group IAS (WG1, WG2, WG3) o sessione speciale (SPR)

WG2

Tipo di presentazione (orale o poster)

orale su invito

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