



Air Pollution in Megacities: Sources and Regional/Global Effects

P. Artaxo

Institute of Physics, University of Sao Paulo, Brazil. Artaxo@if.usp.br,

Air Pollution in Megacities is increasing significantly in all continents. The socio-economic and health problems are escalating, especially in developing countries. In terms of sources, urban transportation is relevant in most cities, as well as industrial pollution. In Latin American cities such as Sao Paulo, Mexico City and Santiago, serious governmental efforts are being doing to reduce emissions and effects. Latin America has about 300 cities with population above 300.000 people. In Sao Paulo, the significant increase in the use of ethanol as fuel brings important increase in atmospheric aldehyde concentrations. In all 3 Latin American megacities, high aerosol concentrations are observed, with important effects on population health. Large studies on aerosol source apportionment were done in these 3 cities, and detailed results will be presented. Quantification of aerosol sources is a problem, especially in the organic aerosol component that is high in most of megacities. The difficulty arises from obtaining reliable source profiles, as well as to know detailed meteorological conditions. In Asia and Africa, the problems are similar as in Latin America, with the transportation sector being the dominant air pollution source in most urban center, with important health effects. The large emissions from these urban centers are relevant and needs to be taken into account in policies to reduce air pollutants with associated reductions in greenhouse gas emissions.