SPECIATION OF PARTICULATE MATTER IN THE MEXICO CITY METROPOLITAN AREA DURING MILAGRO CAMPAIGN

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Levels and composition of particulate matter (PM2.5, PM10 and PST) have been measured simultaneously at two sites in the Mexico City Metropolitan Area (T0 and CENICA) and at one site 50 km far from Mexico City (T1). Spatial and time (day and night) variations have been analysed. Contrary to what was expected, coarse fraction levels were higher at T1 than CENICA and T0, whereas fine fraction levels were lower. The higher levels of the coarse fraction at T1 are due to the high load of crustal component. Moreover, crustal levels were higher during daytime than during nights at all sites, while some secondary compounds (sulphate and ammonium) presented the opposite variation. Regarding the levels of trace elements, levels of Pb, Zn and Cd were higher at T0 than at CENICA and T1, maybe due to traffic contribution. As levels did not show a clear pattern, being alternatively higher at CENICA and T0. Two intense episodes of Hg have been recorded, more noticeable at T1 than at the urban sites. V and Ni showed the same evolution at all sites and fractions, being alternatively higher at the three sites. Recorded levels of most of the analysed trace elements were clearly higher than usual ranges observed in Spanish urban areas. In order to identify the sources of the studied pollutants, a statistical analysis has been carried out.