

A PRELIMINARY IDENTIFICATION OF THE ORIGIN OF SOME OF THE
ELEMENTS CONTAINED IN THE AEROSOLS OF SÃO PAULO -BRAZIL

Depulveda Munita, C. J. A.
C.S. Munita*, R.P. Paiva*, I.L. Cunha*, C.D. Alonso** ,
J. Romano**, M.H.R. Martins**

*Instituto de Pesquisas Energéticas e Nucleares
Divisão de Radioquímica, Caixa Postal 11049,
CEP 05499 - São Paulo - Brasil

** Companhia de Tecnologia de Saneamento Ambiental
Av. Prof. F.Herman Jr, 345, CEP 05459, São Paulo
Brasil

ABSTRACT

The concentration of Al, As, Ba, Br, Ca, Ce, Cl, Co, Cr, Cu, Fe, K, La, Mn, Na, Ni, P, Pb, Rb, S, Sb, Sc, Se, Si, Sm, Sr, Ti, Th, V, W and Zn were determined using Energy Dispersive X-Ray Fluorescence (ED-XRF) and Instrumental Neutron Activation Analysis (INAA). The combination of the two techniques, ED-XRF followed by INAA, showed to be particularly useful.

The aerosols were collected in the city of São Paulo using a Dichotomous Sampler that fractionates suspended particles into two size fractions: coarse, 2.5 to 10 μm and fine, less than 2.5 μm . The two particles fractions were collected uniformly on two teflon membrane filters.

With the aim of identifying the main sources of the aerosols the correlation coefficients and the enrichment factors were calculated.

The study showed that the airborne particles are predominantly of natural origin, although there is also some contribution from the anthropogenic sources. With the purpose to obtain information about the anthropogenic sources, factor analysis was applied.

This work was presented in the "VIII International Symposium on Nuclear Chemistry, Radiochemistry and Radiation Chemistry", Toluca, México, July 09-13, 1990.