



## **PM10 time-resolved mass closure and source apportionment by Positive Matrix Factorization in Milan (Italy)**

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Aiming at the planning of a PM abatement strategy it is important to know the detailed chemical and physical properties of atmospheric aerosol for the identification of sources, for the application of models that quantify the contribution from different sources and for the evaluation of the environmental impact of particulate matter. High-time temporal resolution and size-segrated samplings are very useful to reach these goals. In this paper we report results of two intensive campaigns carried out during summertime and wintertime 2006 at an urban background site in Milan (Italy). A number of parameters have been measured to obtain complete information on atmospheric aerosol: PM10 sampled with 4-hours resolution was analysed for elemental composition, soluble components and EC/OC fractions to investigate on temporal patterns and to obtain time-resolved mass closure, fine and coarse PM fractions were collected with hourly resolution and their elemental composition was obtained by PIXE analysis and to enhance the comprehension of peculiar temporal patterns, number size distributions were correlated with chemical components and the assessment of atmospheric dispersion conditions by means of Radon and meteorological parameters measurements was also performed. Source apportionment was carried out using Positive Matrix Factorization on time resolved data and the capability of this receptor model in identifying short time emitting sources has been also tested.