

ATMOSPHERIC POLLUTION IN ZARAGOZA URBAN AREA

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EXTENDED ABSTRACT

The concentration of seven polycyclic aromatic hydrocarbons (PAH) associated to the atmospheric solid phase was measured in the Zaragoza (North-East of Spain) atmosphere using fluorescence spectroscopy in the synchronous mode (FS). The PAH results were reported for four different urban and suburban places, located within the city and during the period Oct 1999 – Sep 2001. The PAH data obtained indicated the importance of local sources generated from urban/industrial areas. Although the PAH total concentration was quite similar in all the sampling sites, the main differences were due to Benzo[a]pyrene (BaP) and Coronene (Cor) concentrations, reaching the highest values in the sites associated with heavy traffic (trucks, lorries, etc). The temporal evolution of atmospheric solid phase PAH concentrations indicated a seasonal trend. Higher PAH concentrations were found during colder seasons for the four sampling sites. The influence of environmental parameters such as temperature, rain, relative humidity, wind speed and direction on the PAH emissions was analyzed observing a positive correlation between the total PAH concentration and the relative humidity and a negative one with the temperature.

Key words: particulate-bound PAH, urban air pollution, Zaragoza, seasonal trend, emission sources.