



## **Comparison of PM<sub>10</sub> loadings between North and South locations in Athens periphery and simultaneous monitoring and mapping at different bands of electromagnetic spectrum**

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### **ABSTRACT**

Severe pollution problems in Athens immersed suddenly in the 80s with the rapid urbanism and urbanization. The immediate consequence was the enormous increase of vehicle number in use, creating an unbearable atmosphere in absence of wind ventilation, especially in the early morning. Monitoring of PM<sub>10</sub> at different locations in Athens are the object of this work. The investigation consists of sporadic measurements collected in autumn and winter 2006-2007, from three vital points along a North - Center- South axis of Athens, at different heights from the sea level. A  $\beta$ -attenuation particulate monitor and a portable PM detector (light scattering-MetOne instr.US.) were used for the PM levels identification in conjunction with meteorological parameters (temperature, humidity, wind and conductivity). In addition, during the period of PM measurements four radio telescopes in two different ground stations (3 km distance between them), monitoring at several bands of spectrum were operating. Three yaghi array antenna of four elements each and one antenna dish 3.00 m., posted in 2,

4, 6 m. high above the ground. The amplitude of radio signal was found to follow the daily traffic pattern. An attempt to correlate the radio signals at various frequencies of the EM spectrum with the PM concentrations is made in order to test the extent at which man-made activities are associated and influence the EM wave propagation, depending also to the specific atmospheric conditions