



## **CO Pollution: a comparative study during high traffic conditions in the cities of Athens, Naples and Islamabad. Health impacts**

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### Abstract

Since the 19th century anthropogenic activities in urban areas have increased dramatically due to socio-economic evolution, increased urbanization and transport needs. Fifty seven years ago London experienced the impacts of an acute atmospheric pollution episode, due to elevated levels of black carbon aerosols (BC) and SO<sub>2</sub>, leading to the realization that uncontrolled emissions to the atmosphere lead to severe impacts on human health. Many large cities (Mega cities) in the developed and developing world have, for the last two decades, been plagued by high levels of atmospheric pollution, a problem that the European and worldwide scientific community are at present studying with measurable success. However, due to rapid industrial development and the ever increasing traffic, many more studies are required to support decision makers and governments on measures to reduce atmospheric pollution and mitigate the associated serious health effects on the population. Registered health problems are numerous and dramatic in all ages groups, but particularly so in infants, and patients suffering from chronic diseases due to increased levels of pollutants and nocive substance inhaled, entering the lungs and blood stream and finally being deposited in several organs. Recent studies indicate that cardiac arrhythmias associated to increased atmospheric pollution pose a serious threat to human health. K.N.Grigoropoulos, et al.2008.

This study is based on monitoring and mapping CO levels in six areas 3 different cities i.e. Athens, Naples and Islamabad, the objective being to present and analyze the spatial and temporal variability of carbon monoxide (CO) levels leading to the estimation of the concentration levels and the quantities inhaled by pedestrians on a daily basis. It is well know that exposure to carbon monoxide concentration values in excess of 200ppm for 2-3 h usually create headaches, tiredness, fatigue and nausea, whereas human exposure of values of 800 ppm for over three hours, are fatal. The findings of this research indicate that although CO concentrations remain at low levels throughout the measurement period, several peaks of high CO concentration are obtained, in many instances of several minutes duration, which are incompatible with public health levels and conditions for the afore mentioned cities. This research is yet another reminder that it is timely and necessary for the European Community to re examine and evaluate the framework pertinent to CO emissions and levels in the urban ambient atmosphere.