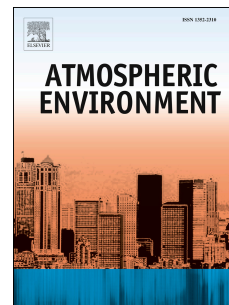


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# Temporal and spatial variations of particulate matter and gaseous pollutants in the urban area of Tehran

O. Alizadeh-Choobari\*, A. A. Bidokhti<sup>a,\*</sup>, P. Ghafarian<sup>b,\*</sup>, M. S. Najafi<sup>c,\*</sup>

<sup>a</sup>*Institute of Geophysics, University of Tehran, Tehran, Iran*

<sup>b</sup>*Iranian National Institute for Oceanography and Atmospheric Science, Tehran, Iran*

<sup>c</sup>*Faculty of Geography and Planning, University of Tabriz, Tabriz, Iran*

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## Abstract

Being hemmed in on two sides by high mountains, the urban area of Tehran is characterized by high levels of particulate matter and gaseous pollutants, which have adverse consequences on human health, ecosystems and environment. Using air quality measurements taken in different regions of Tehran, spatial and temporal variations of particulate matter and gaseous pollutants are analyzed to identify the typical climatological aspects of air pollutants. In terms of particulate matter concentrations, south of Tehran is more polluted than central to north, while west of Tehran is more polluted than the east. Concentrations of particles in north of Tehran are lower in the midday compared to the midnight, whereas the opposite is true in south of Tehran. The observed annual mean concentrations of PM<sub>2.5</sub> and PM<sub>10</sub> in north of Tehran were 37.5 and 76.3  $\mu\text{g m}^{-3}$ , respectively, which are substantially greater than the national annual mean safety limits of 10  $\mu\text{g m}^{-3}$  for PM<sub>2.5</sub> and 20  $\mu\text{g m}^{-3}$  for PM<sub>10</sub>. The observed high levels of particulate matter

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\*Corresponding author. Institute of Geophysics, University of Tehran, Tehran, Iran.  
*Email address:* [omid.alizadeh@ut.ac.ir](mailto:omid.alizadeh@ut.ac.ir) (O. Alizadeh-Choobari)

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