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# An Investigation of High Nocturnal Ozone Levels at Some Surface Sites in Tehran, Iran - A Case Study

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The objective of this study is to investigate possible contributors to the nocturnal ozone ($O_3$) maxima in an urban city (Tehran, Iran). The analysis was conducted using the surface measurements of some air monitoring stations over a continuous period of six months ($20^{th}$ March 2016 until $21^{st}$ September 2016). In this study, the mean diurnal variations of ozone concentration and some precursors such as nitrogen dioxide ($NO_2$) and nitrogen oxide (NO) concentrations were evaluated over the spring and summer months. The nocturnal ozone concentrations were further assessed with respect to meteorological parameters such as wind speed and direction, temperature, relative humidity, and pressure. The hourly variations of the above mentioned precursors and meteorological factors were analyzed over a 10-day period with high nocturnal ozone concentrations. In addition, the vertical profile of potential temperature, wind speed and wind direction was also analyzed and was compared between nights with and without ozone maxima. According to the findings, there is a clear trade-off between chemistry, horizontal and vertical transport during the considered period. The results indicate a negative moderate correlation between $NO_2$ and $O_3$concentrations and a weak correlation between wind direction and ozone peaks.