

**PM10 AND VISIBILITY IN TEL-AVIV AS AFFECTED BY METEOROLOGICAL CONDITIONS
AND ATMOSPHERIC CIRCULATION TYPES**

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A 3-yr data set (02.2000 – 11.2002) of 30 min averages for gases, particulates, visual range (VR) and meteorological data were analyzed in order to examine the dependence of PM10 concentrations and VR in Tel-Aviv on seasonal meteorological conditions and synoptic weather patterns. The persistent nature of the summer synoptic weather pattern in the East Mediterranean (EM) region is manifested by the low variability in PM10 concentrations, as compared to other seasons. The spring is featured by the frequent passage of warm cyclones, transporting dust from N. Africa to the EM. Application of Gomez and Smith's (1987) definition of 'very good visibility' for VR > 19 km shows that about 90% of the summer and fall months Tel Aviv meets this criteria. Sector partitioning of the data set by wind speed and direction indicates that the strongest influence on visibility and PM10 loading is the inflow direction of air masses towards the EM and the stability conditions of the shallow troposphere, enabling the build-up of locally emitted pollutants. The visibility conditions and PM10 loading data were classified into distinct regional synoptic circulation patterns. This classification indicates that the lowest mean VR is related to winter SW winds characterized by homogeneous marine air masses as compared to the heterogeneous air masses imported by easterly winds. Indeed, the circulation type associated with the highest median PM10 concentrations is featured by south easterlies, as compared to the second lowest median obtained for the synoptic category generating north easterlies.