

## **Atmospheric aerosols in the Middle East: Trans-boundary pollution and toxicity considerations**

YIGAL EREL AND OFIR TIROSH<sup>1</sup>

<sup>1</sup>Institute of Earth Sciences, The Hebrew University,  
yerel@vms.huji.ac.il

The Middle East is one of the regions in the world where relatively high concentrations of atmospheric particulate matter (PM) have been recorded. It has been suggested that PM levels in the Middle East are present at levels that might have health effects. In the current study, we summarize results published by our group over the last decade and introduce new data which demonstrate the extent of trans-boundary aerosol transport, and the fact that synoptic conditions control the chemical and mineralogical composition of atmospheric aerosols and might also affect their toxicity. These results are based on extensive analysis of the chemical, isotopic and mineralogical compositions of desert dust and anthropogenic aerosols including toxicology experiments with an emphasis on the PM<sub>2.5</sub> fraction.