



## **A model study of ozone distribution and origin in the Eastern Mediterranean**

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The global three-dimensional model of tropospheric chemistry GEOS-CHEM is used to study the ozone distribution and origins over the Eastern Mediterranean Basin. This work focuses on whether ozone and its precursors at this region are locally produced or imported from elsewhere. In this sense, their sources are quantified and it is studied whether most of the East Mediterranean pollution originates from the West Europe, East Europe, Africa or Asia. Furthermore, the meteorological conditions that favor the formation of the plumes over Greece and East Mediterranean during different seasons of the year are examined. Model runs for a two-year period are performed and results for the year 2001 are presented, in order to allow for a one-year model spin-up. All simulations are initialized in January 2000. Model calculations are compared to observations at representative stations across Mediterranean Basin. A standard full chemistry (NO<sub>x</sub>-O<sub>x</sub>-Hydrocarbon-aerosol simulation w/ SMVGEAR solver) run is performed initially. Then, a series of sensitivity runs is performed in which anthropogenic and natural emissions of NO<sub>x</sub>, CO and NMVOC are set to zero at several regions.