

# Poster 1.7

## Atmospheric Observatory Eastern Mediterranean

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The Eastern Mediterranean is a unique yet poorly observed region for atmospheric chemistry<sup>1</sup>. Surrounded by the diverse ecosystems and populations of southern and Eastern Europe, the Middle East and North Africa, it experiences a diverse mix of anthropogenic, biogenic and natural aerosols:

- sand and dust storms from northern Africa, the Gulf region and Middle East are frequent and severe.
- biomass burning aerosols are common in the arid summer half of the year
- anthropogenic sulphates, nitrates and organics are produced from gas to particle conversion and advected into the region from many sources.
- sea salt aerosols in the moist planetary boundary layer of the Mediterranean can mix with the above aerosols.

These can impact weather, climate, health, nutrient inputs to ecosystems, visibility, transportation and agriculture.

Although there are comprehensive air chemistry observations at individual stations over the region that are registered with ACTRIS, they are largely uncoordinated:

- In Crete, the Finokalia station has been operating for twenty years.
- In Cyprus, the Agia Marina station has been operating as a regional station in the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) for over 15 years and is imbedded in a 9 station environmental network. In addition, there is an aerosol remote sensing LIDAR and AERONET photometer operated under ACTRIS as well as Unmanned Aircraft operated under the European project BACCHUS.
- In south western Greece at the Navarino Environmental Observatory, aerosols have been measured for almost four years jointly by University of Stockholm and National Observatory of Athens.
- In surrounding countries, there are links to be forged to ongoing observational efforts.
- Throughout the region, there is some coverage of surface based AOD remote sensing by AERONET that needs to be enhanced.
- There is coverage by NASA MODIS and CALIPSO satellite aerosol instruments as well as European METEOSAT.

*! Global Air Pollution Crossroads over the Mediterranean, J. Lelieveld et al., Science, 298, 797-799, 2002*



### Future Infrastructure

It is proposed that a consortium focusing on the Atmospheric Observatory Eastern Mediterranean is developed as part of a future European aerosol and atmospheric chemistry observing infrastructure. One key goal is to utilize existing expertise in the consortium to build capacity for atmospheric observations and research in the region.

For a description of Cyprus observational research plans see Poster 1.8 Barrie et al