

## EDITORIAL

Air pollution transport and diffusion over coastal urban areas have been the subject of many experimental and theoretical studies worldwide, including a North Atlantic Treaty Organization Committee for the Challenges of Modern Society pilot study directed by this guest editor from 1992 to 1996. The pilot study resulted in the issuance of guidelines for the collection of reference data to validate existing air pollution simulation codes used in coastal urban areas. Because of the significance of local topography and local meteorological features, more research is needed to understand air pollution dynamics in coastal urban/industrial areas. This special issue of the *Journal of Applied Meteorology (JAM)* was initiated by its guest editor to highlight the environmental problems in coastal urban areas.

This special issue comprises eight papers that report results, both experimental and theoretical, from European Commission projects. Seven of the eight papers focus on the Mediterranean area; the eighth focuses on the north coast of Germany. Two papers (Alonso et al. and Millán et al.) describe ozone transport on the Iberian Peninsula during the Mesometeorological Cycles of Air Pollution in the Iberian Peninsula project. (Ozone transport over the Athens urban area from the adjacent sea under sea-breeze conditions also was investigated during the Athens Internal Boundary Layer Experiment performed during 1989–91.) An ozone reservoir was formed at an altitude of 1200–2000 m as a result of local coastal complex topography and appropriate weather conditions. Under subsidence conditions, such a reservoir may result in higher ozone concentrations at the ground. Melas et al. describe air quality management in the Rome area using sodar data together with a numerical model. A second paper by Melas et al. investigates sea-breeze conditions in Sardinia, specifically a cyclonic eddy pattern that forms during the late afternoon. Andronopoulos et al. discuss some results from the Biogenic Emissions in the Mediterranean Area campaign, focusing on biogenic volatile organic compounds and ozone formation. A two-part paper (Part I by Clappier et al., Part II by Grossi et al.) focuses on the Mediterranean Campaign of Photochemical Tracers—Transport and Chemical Evolution campaign, which studied Athens's environmental problems. In Part I, the effect of sea-breeze conditions on ozone buildup is investigated. In Part II, the effect of different emission scenarios on ozone concentrations is studied. Aspects such as the role of day- and nighttime emissions, pollutant recirculation, and spatial distribution of emission sources are investigated. The last paper of this special issue, by Kapitza and Eppel, discusses the seasonal differences in transport and deposition of atmospheric lead over the coastal zone in northern Germany. The main finding of the study is that models of sea-breeze flow and lead concentration patterns in the summer are sensitive to the incorporation of clouds.

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Guest Editor