Editorial

László Makra*

Department of Climatology and Landscape Ecology,
University of Szeged,
P.O. Box. 653,
Szeged H-6701, Hungary
E-mail: makra@geo.u-szeged.hu
*Corresponding author

Harry D. Kambezidis

Atmospheric Research Team,
Institute for Environmental Research and Sustainable Development,
National Observatory of Athens,
P.O. Box 20048,
Athens GR-11810, Greece
E-mail: harry@env.meteo.noa.gr

Biographical notes: László Makra is an Associate Professor in the Department of Climatology and Landscape Ecology, University of Szeged, Hungary. He received a PhD in Meteorology. His recent research interests are local- and mezo-scale air pollution (urban air pollution, background aerosol) and statistical climatology. He is an active participant in international researches such as elemental composition of atmospheric aerosol (Northwestern China, Indonesia, Brazil) and urban air pollution (Germany, Greece). He has been involved as a Scientific Researcher in several Hungarian and European projects.

Harry D. Kambezidis is a Research Director in the Institute for Environmental Research and Sustainable Development, National Observatory of Athens, Athens, Greece. He has established and is leading the Atmospheric Research Team (ART, http://www.geocities.com/smyrnis64/Atmos_Res_Team.html) that deals with the topic of atmospheric physics; this includes research in atmospheric pollution, atmospheric turbidity and atmospheric aerosols as well as solar radiation studies. He received a PhD in Atmospheric Physics. He is a principal author or co-author in more than 200 publications. He has participated or is participating in many international, European or national research projects and has collaboration with more than 40 establishments. He is a reviewer in several international scientific journals and a member of the scientific committees of many conferences. He has been awarded grants from the Deutscher Akademischer Austauschdienst and the British Council. He has been the President of the Hellenic Physical Union and is the current President of the Hellenic Illumination Committee.

If we travel by plane at the height of 10 km, we can often see a narrow greyish band on the horizon, wherever we are: either over Siberia, Greenland, the rain-forests of Amazonian, or over the Plateau of Brazil, the Atlantic or Pacific Oceans, or over the

Copyright © 2009 Inderscience Enterprises Ltd.

Australian deserts. This is air pollution (partly with pollutants of natural origin), which has become a very important environmental problem. Most human activities produce some kind of pollutants, which are progressively accumulated, mainly in urban agglomerations. Air pollutants play an important role in the atmosphere; for example, they can modify radiative transfer, formation of clouds, fogs and precipitation. Moreover, they may damage human health, vegetation and the global environment. Furthermore, gaseous pollutants contribute substantially to the global warming.

This Special Issue represents, among other things, statistical characteristics of particulate matter and traffic-related emissions in urban agglomerations, air quality indices to assess air pollution and classification of air pollutants by using different methodological background. Furthermore, it shows various techniques and databases in studying aerosol characteristics.

The results shown in this Special Issue acquired by new or combined techniques and by using reliable and extensive databases may require reconsideration of air quality policy decisions. And, as a consequence, better information will result in better forecasts of the benefits of air quality improvement.

This kind of research, and also the results of this Special Issue, will provide policy-makers and local decision-makers with the air quality information they need to make decisions concerning public health, healthcare, epidemiology (related to demography) and also the organic and inorganic environment. On the other hand, this will improve our understanding of air quality dynamics. Prediction of pollutant levels also provides essential information for improving air pollution models used to predict extreme pollution loads.

More than 50% of the Earth's population lives in cities where air pollution levels frequently exceed the local health-based standards. Air pollution, such as ozone and particulate matter (including dust, soot and sulphates) can cause respiratory problems and can also trigger cardio-vascular diseases. Air pollution controls might prevent several thousand deaths. This kind of research will improve the effectiveness of air pollution policies by detecting complex relationships of data using statistical methods and by presenting that information to decision-makers in a clear and relevant manner. The results shown in this Special Issue are important in working towards a reduction in air quality-related health problems.