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## **Preface**

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Dispersion modelling is an essential tool to assess the environmental and human health impact of air pollution sources. There is a variety of sources of concern, such as transport sector releases, industrial releases, accidental releases, deliberate releases, natural releases, etc. Models can provide detailed information on the distribution of pollutants coming from the above mentioned sources, a valuable input when applying an air quality or an emergency management plan or projecting future scenarios.

There is a variety of models – simple or complex – covering different space or/and time scales and different areas of applicability. The user needs to select a fit-for-purpose dispersion model that produces reliable results, is transparent and easy to make proper use of.

There are many aspects of this such as: ensuring that models are scientifically sound; model validation; guidance to ensure proper use of models; promotion of good practices and elimination of bad practices; quality assurance with respect to model development; establishment of reference problems; comparability of input and output; ensuring proper exchange of experiences.

Such issues that are not specific for one particular model, but common to several, were in focus at the 14th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes.

The Conference is aimed towards model developers, model users, environmental protection agencies, and environmental legislation experts. It is distinguished from other conferences because it focuses on common tools and methodologies.

The conferences have a role as a forum where participant users and decision-makers can bring their requirements to the attention of scientists.

The conference is a natural forum for discussing modelling issues related to the European Union air quality directives. European networks such as the FAIRMODE network may find the conference useful in order to expose their work to a wider audience.

The conference also tries to focus even further on issues that are presently high in the agenda of scientists and stakeholders. The present Conference besides FAIRMODE, pay special attention to the problem of multi-scaling in urban environments and to the recent Fukushima Nuclear Accident.

The entire series of harmonisation conferences is the result of an initiative launched in 1991 (see <http://www.harmo.org>). The 14th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes in Kos Island, Greece, 2–6 October 2011, has continued the efforts of previous conferences.

On behalf of the Organising Committee, I would like to thank the Steering and Scientific Committees for their effort in reviewing technical and scientific contributions and the staff of the Environmental Technology Laboratory, Mechanical Engineering Department, University of Western Macedonia for their help in planning and preparing the Conference. Also, I would like to thank all participants for their valuable effort in making this publication possible.

In this special issue are presented manuscripts selected after successfully passing the peer review process according to the *IJEP* standards. The manuscripts reflect the state-of-the-art and the current understanding on the various topics at the time of this conference. We hope that you will find these useful and we look forward to seeing you also in future events on harmonisation within atmospheric dispersion modelling for regulatory purposes.