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Monitoring and Management of Air Pollution

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Air Pollution XVII

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Preface

This volume contains the reviewed papers accepted for the Seventeenth International Conference on Modelling, Monitoring and Management of Air Pollution held in Tallinn, Estonia in July 2009. This meeting similarly to the previous meetings has attracted outstanding contributions from leading researchers in the field. All the presented contributions are permanently stored in the WIT eLibrary as Transactions of the Wessex Institute (see http://library.witpress.com/).

Air pollution is highly topical nowadays due to the increase in the number of emission sources and the significance that good quality air has on human health. The complexity of this topic is increased by the fact that air pollution generated locally can have an impact on a regional and in some cases even on a global scale. The contaminants emitted in one place can quickly disperse through the atmosphere and industrial activities in one country can affect the air quality in another. More accurate and reliable predictive models are necessary, which can be used to assess the influence of one or several sources of pollution on various end points. The improvements are possible through achieving better quantification of emission rates and more accurate information on composition of pollutants of various sources, improving transport models on a regional scale which can include accurate predictions on local scale where necessary, enhancing the knowledge on the chemical reactions transforming existing and creating new pollutants, deposition of particles, and improving the understanding of impact of separate pollutants and combinations of pollutants on human health and the environment.

The technology constantly brings new products to the consumers and with this comes the possibility of creating new contaminants. Perhaps a good example is the emerging industry producing nanoparticles. Although nanoparticles have always existed in the environment, only recently have people become concerned with their effect upon human health due to the increasing quantities being produced. The history of new products, e.g. asbestos, shows that sometimes whether one product represents a threat to human health, or commodity, depends only upon our level of understanding about the product properties. This indicates that technological

development will constantly demand research in the field of air pollution in order to better understand and prevent, or bring to acceptable levels, new pollution sources. The process of defining the acceptable levels is constantly demanding new research to understand better the impact of long term exposure to various pollutants, or mixtures where separate components can have synergistic effects. The improved knowledge on the effect of pollutants on human health forces periodic review of the regulations for air quality and emissions. Further research for improving, monitoring and detection technology is required in order to be able to verify that the current regulations for air quality are satisfied, and to identify areas where further improvements are required.

The papers in this volume address a wide range of topics including air management and policy, aerosols and particles, air pollution effects and environmental health, air pollution modelling, emission studies, global and regional studies, monitoring and measuring and pollution effects and reduction.

The Editors are grateful to all the participants for the quality of their contributions as well as the eminent members of the International Scientific Advisory Committee and other colleagues who reviewed the papers published in this volume.

The Editors
Tallinn, 2009

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