
Preface

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Biographical note: Armand Albergel (52) dedicates his life to the atmospheric environment. He holds a Masters in hydraulic engineering (fluid dynamics) from Grenoble Institute of Technology (INPG) and a Ph.D. from Grenoble University (geophysical fluid and environment). He has always worked in the environmental field, first in hydrology and water resources as a technical assistant in Côte d'Ivoire (1983–1985), then as a research scientist for EDF, the French electricity board (1983–1990), where he developed advanced emergency response systems. He is one of the three co-founders and Deputy Director General of ARIA Technologies since 1990. His main interests lie in regional and urban air quality, accidental hazardous releases in the atmosphere, renewable energies (wind and solar power) and more recently, climate change (carbon count, mitigation and adaptation). Apart from his work in managing ARIA Technologies and developing its international business (he is in charge of Asia: China, India, Japan), he teaches the course on atmospheric environment at the National School of Engineering (ENSI) of Bourges, and is a senior expert for the Air Liquide Group. He also participates in several working groups for the French Ministry of Environment and is a member of the scientific committee of the International Conference on Harmonization within Atmospheric Dispersion Modeling for Regulatory Purposes (HARMO).

Over the past decade, the world has become increasingly concerned about a trio of related issues: sustainable development, environmental protection and global climate change. The atmosphere as a whole, and the air that we breathe, are seen more than ever as a precious resource for which all humankind is responsible. As members of the modelling community, we have in our hands one of the most promising and powerful tools imaginable for managing this resource: the 'model'.

In fact, modelling is rooted in a vision that weaves together three distinct threads: an understanding of complex physical phenomena, some well-known and validated principles such as conservation and a slew of assumptions. With the growing ubiquity of computers, the digital model has become a convenient way for describing and disseminating this vision; it can now be duplicated, identically, everywhere, by everyone—at least in theory. The model is such a powerful tool that it can become very useful, but also very dangerous – if we lose the overall vision, the physical concepts behind it and limits of its applicability. To share the tool, we need first to share the underlying vision. This is why we need 'harmonisation' and the HARMO conference cycles aim, to address this tremendous challenge.

All of us—and the HARMO founders in the Steering Committee probably even more—can appreciate what a long and arduous road has been travelled over the past few

decades. It has taken us from the Pasquill-Turner classification to the routine, online run of mesoscale codes. We have seen great progress between the general line of enquiry on the Chernobyl cloud in 1986 and the quasi-instantaneous maps that stopped all air traffic after modelling the Eyjafjallajökull volcano plume. In less than 30 years, all environmental impact studies and safety analysis reports worldwide have come to include modelling. The expensive modelling technology that was initially developed in and reserved for such major industries as the nuclear industry, is now applied for any incinerator stack, any small release, and even for fugitive and harmless odours.

The significant number of papers submitted for this conference showing the increasing use of detailed 3D Lagrangian and CFD modelling for regulatory purposes is impressive indeed. Things have come a long way indeed from those earlier HARMO conferences when CFDs meant “Cartoons For Directors”!

Nonetheless, we still have quite a way to go along the path towards “harmony”. It is to be hoped that the HARMO’13 conference will be, as was its predecessor, a forum where users, decision-makers and scientists can convey their needs to each other.

We hope that the 13th International Conference on ‘Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes’ held in Paris, France, from 1 to 4 June 2010, has successfully helped in this collaborative work.

On behalf of the local Organising Committee, I would like to thank the Steering and Scientific Committees for their diligence in reviewing technical and scientific contributions; Dr. Helge Olsen for his help and personal involvement; the CEA (Patrick ARMAND), INERIS (Laurence Rouil), JRC, EDF, Eurasap for their support; all the staff of ARIA Technologies (France) and ARIANET (Italy) for their help and availability, especially Jacques Moussafir, Giuseppe Brusasca, Audrey Deblay, Bernard Favre, Terri Andon, Catherine Sebastia, Mélanie Gavard and Jérôme Carrère.

In this special issue are presented selected papers that have successfully gone through the peer review process according to the IJEP standards. The papers reflect the state-of-the-art and the current understanding on various topics at the time of this conference. We hope that you will find these useful and we look forward to seeing you at future HARMO events.