

1. Record Nr.	UNINA9910298373503321
Titolo	Air Pollution Modeling and its Application XXIII // edited by Douw Steyn, Rohit Mathur
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2014
ISBN	3-319-04379-X
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (624 p.)
Collana	Springer Proceedings in Complexity, , 2213-8684
Disciplina	628.53015118
Soggetti	Air pollution Atmospheric sciences Environmental sciences Geophysics Physics Atmospheric Protection/Air Quality Control/Air Pollution Atmospheric Sciences Math. Appl. in Environmental Science Geophysics and Environmental Physics Applications of Graph Theory and Complex Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Part I Air quality and human health -- Use of air quality modeling results in health effects research -- 2 Air quality effects on human health -- 3 Development of model-based air pollution exposure metrics for use in epidemiologic studies -- 4 Improved spatiotemporal air pollutant mixture characterization for health studies -- 5 Advances in linked air quality, farm management and biogeochemistry models to address bidirectional ammonia flux in CMAQ -- 6 A temporal NOx emissions trading system: case study of US power plants -- 7 Source attribution of attainment and exposure-based ozone metrics in North America -- 8 CASTNET methodology for modeling dry and total deposition -- 9 ACCEPTED: an Assessment of Changing Conditions, Environmental Policies, Time-activities, Exposure and Disease -- Part II

Climate change and air quality -- 10 Studying aerosol-cloud-climate interactions over East Asia using WRF/Chem -- 11 Investigation of trends in aerosol direct radiative effects over North America using a coupled meteorology-chemistry model -- 12 Future year air quality change due to growth in aircraft emissions and changes in climate -- Part III Aerosols in the atmosphere -- 13 The use of a Non Negative Matrix Factorization method combined to PM2.5 chemical data for a source apportionment study in different environments -- 14 On the interplay between upper and ground levels dynamics and chemistry in determining the surface aerosol budget -- 15 Modeling of aerosol indirect effects with WRF/Chem over Europe -- 16 The influence of cloud chemical processes on the formation of secondary particulate matter -- 17 An improved volatility basis set for modeling organic aerosol in both CAMx and CMAQ -- 18 Issues related to on/offline meteorological and atmospheric chemistry model coupling -- 19 Increases in wintertime oxidation capacity counteract the success of emission reduction measures in Europe with respect to secondary inorganic aerosols -- 20 Investigating the contribution of biogenic emissions to the formation of secondary pollutants in Portugal -- 21 Modelling aerosol-cloud-meteorology interaction: a case study with a fully coupled air quality model (GEM-MACH) -- 22 Evaluation of cloud chemistry mechanism towards laboratory experiments -- 23 Effects of surf zone sea-spray particles on aerosol concentration in coastal area -- 24 Novel pathways to form secondary organic aerosols: glyoxal SOA in WRF/Chem -- 25 Modeling seasonal changes in organic aerosol composition at the puy de Dôme (France) -- 26 Using WRF-CMAQ air quality modelling system to estimate BaP concentrations over Zaragoza (Spain) -- 27 The POAEMM project: prediction of spatial and temporal variation of marine aerosols in coastal area -- 28 An integrated Weather and Sea State Forecasting system for the Arabian Peninsula (WASSF) -- 29 Modelling past and future changes in secondary inorganic aerosol concentrations in the UK -- Part IV Regional and intercontinental modeling -- 30 Modelling the impact of energy transitions on air quality and source receptor relations -- 31 Impact of mercury chemistry on regional concentration and deposition patterns -- 32 A multiscale modeling study to assess impacts of full-flight aircraft emissions on upper troposphere and surface air quality -- 33 Relevance of photolysis frequencies calculation aspects to the ozone concentration simulation -- 34 Air pollution in China in January 2013 -- 35 Impact on Ontario's air quality due to changes in North American emission from 2005 to 2020 -- 36 Modelling the concentration and deposition of heavy metals in the UK -- 37 A process analysis of the impact of air-quality/weather feedbacks using GEM-MACH -- 38 Analog-based postprocessing methods for air quality forecasting -- 39 Comparing different modeling approaches in obtaining regional scale concentration maps -- 40 Impact of RACM2, halogen chemistry and updated ozone deposition velocity on hemispheric ozone predictions -- 41 A global wildfire emission and atmospheric composition: refinement of the Integrated System For Wild-Land Fires IS4FIRES -- 42 The regional LOTOS-EUROS model on tour -- 43 The incorporation of the US national emission inventory into version 2 of the Hemispheric Transport of Air Pollutants inventory -- 44 Impact of vertical and horizontal resolutions on chemistry transport modeling -- 45 A model study on the effects of emission reductions on European air quality between 1990 and 2020 -- 46 Analysis and modelling of ambient air toxics pollutants in Canada with Environment Canada AURAMS model -- 47 Investigating the coherence between a global and a limited area model for dust particle production and distribution in N. Africa -- 48

Effects of future ship emissions in the North Sea on air quality -- 49
Temporally and spatially resolved air pollution in Georgia using fused
ambient monitor data and chemical transport model results -- 50
Maritime sector emissions contribution to the particulate matter
pollution in a Mediterranean city-port: A modeling approach -- 51
Application and evaluation of the high-resolution regional scale FRAME
model for calculation of ammonia and ammonium air concentrations
for Poland for the years 2002-2008 -- 52 Regional transports of
atmospheric NO_x and HNO₃ over Cape Town -- 53 The impact of
transboundary transport of air pollutants on air quality in the United
Kingdom and Poland -- Part V Local and urban scale modeling -- 54 A
40-year history of a simple urban dispersion model and its evaluation
-- 55 Assessment of the effect of multiscale interactions on the
atmospheric flow and the dispersion of air pollution in the city of Paris
-- 56 PAHs modelling over urban area of Rome: integration of models
results with experimental data -- 57 Modelling the effects of urban
morphology, traffic and pedestrian dynamics on students' exposure to
air pollution -- 58 LES of advective and turbulent passive scalar fluxes
in a street intersection -- 59 Two-phase accidental dense gas releases
simulations with the Lagrangian particle model Microspray -- 60
Modeling of the Urban Heat Island and its effect on air quality using
WRF/WRF-Chem – Assessment of mitigation strategies for a central
European city -- 61 Assessment of three dynamical urban climate
downscaling methods -- 62 Validating the RIO-IFDM street canyon
coupling over Antwerp, Belgium -- 63 The influence of the changing
NO_x-split for compliance to the European limit values in urban areas --
64 Evaluation of air pollution models for their use in emergency
response tools in built environments: the 'Michelstadt' case study in
COST ES1006 ACTION -- 65 Development of a numerical prediction
model system for the assessment of the air quality in Budapest -- 66
Analysis of the differences between pollution levels into a new and an
old district of a big city using dispersion simulations at microscale --
67 Water Tank Simulation of a dense fluid release -- 68 The porosity
concept applied to urban canopy improves the results of Gaussian
dispersion modelling of traffic-dominated emissions -- 69 An
evaluation of the box model estimating carbon monoxide concentration
in the city of Caracas, Venezuela -- 70 Implications of vegetation on
pollutant dispersion in an idealized urban neighborhood -- Part VI
Model assessment and verification -- 71 Dynamic evaluation of the
CMAQv5.0 modeling system: Assessing the model's ability to simulate
ozone changes due to NO_x emission reductions -- 72 Evaluation of a
chemical data assimilation system -- 73 Resolving and quantifying
ozone contributions from boundary conditions within regional models
-- 74 E pluribus unum: KZ filters and Ensemble Air Quality modeling --
75 Air quality model evaluation using Gaussian process modelling and
empirical orthogonal function decomposition -- 76 AQMEII Phase 2:
Overview and WRF-CMAQ Application over North America -- 77
Modelling UK Air Quality for AQMEII2 with the Online Forecast Model
AQUM -- 78 Model inter-comparison study between NMMB/BSC-CTM
and Enviro-HIRLAM on-line systems contributing to the AQMEII-Phase2
initiative -- 79 Can we explain the observed decrease in secondary
inorganic aerosol and its precursors between 1990 and 2009 over
Europe using LOTOS-EUROS? -- 80 Application and evaluation of high-
resolution WRF-CMAQ with simple urban parameterization -- 81 A one
year evaluation of the CTM CHIMERE using SURFEX/TEB within the high
resolution NWP models ALARO and ALADIN for Belgium -- 82
Application of performance indicators based on observation un-
certainty to evaluate a Europe-wide model simulation at urban scale --

83 Multi-model ensembles: how many models do we need? -- 84 Diagnostic evaluation of NO_x emission upgrade on air quality forecast -- 85 Presentation and validation of a new building downwash model -- 86 Boundary-layer and air quality study at "Station Nord" in Greenland -- 87 Evaluation of mesoscale model profiles against consecutive radiosounding data during the Sofia 2003 Experiment -- 88 The use of a mesoscale modeling system together with surface and upper observational data to estimate hourly benzene impacts in a mountainous coastal area -- 89 A sensitivity analysis of the WRF model to shortwave radiation schemes for air quality purposes and evaluation with observational data -- 90 Comparing WRF PBL schemes with experimental data over Northern Italy -- 91 Surface ozone variability in synoptic pattern perspectives -- 92 WRF-Chem model sensitivity analysis to chemical mechanism choice -- Part VII Data assimilation and air quality forecasting -- 93 Assimilation of satellite oceanic and atmospheric products to improve emission forecasting -- 94 Assimilation and forecasting fine aerosols over North America in summer 2012 -- 95 Evaluating the vertical distribution of ozone and its relationship to pollution events in air quality models using satellite data -- 96 Building and testing atmospheric chemistry reanalysis modeling system -- 97 Intensive campaign.

Sommario/riassunto

Recent developments in air pollution modelling are explored as a series of contributions from researchers at the forefront of their field. This newest contribution on air pollution modelling and its application is focused on local, urban, regional and intercontinental modelling; data assimilation and air quality forecasting; model assessment and evaluation; aerosol transformation. Additionally, this work also examines the relationship between air quality and human health and the effects of climate change on air quality. The work derives from a series of papers presented at the 33rd International Technical Meeting on Air Pollution Modelling and its Application held in Miami, USA, August 27 - 31, 2013. The book is intended as reference material for students and professors interested in air pollution modelling at the graduate level as well as researchers and professionals involved in developing and utilizing air pollution models.
