

ITM 2007



29th NATO/SPS International Technical Meeting
on Air Pollution Modelling and its Application



24 - 28 September 2007
University of Aveiro
Aveiro, Portugal



EURASAP

FUNDAÇÃO
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BANCO ESPIRITO SANTO

Caves do Freixo

Torgus

29th ITM Schedule

	Monday, 24 th	Tuesday, 25 th	Wednesday, 26 th	Thursday, 27 th	Friday, 28 th	
08:30-09:00	Registration					
09:00-09:20		T2	T3	T4: Model assessment and verification	T5	
09:20-09:40						
09:40-10:00						Opening Session
10:00-10:20						Invited lecture (T1)
10:20-10:40						
10:40-11:00	Coffee	Coffee	Coffee	Coffee	Coffee	
11:00-11:20	T1: Local and urban scale modelling	T2	T3	T4	Invited lecture (T7)	
11:20-11:40					T6: Interactions between air quality and climate change	T7: Air quality and human health
11:40-12:00						
12:00-12:20						
12:20-12:40	Lunch					
12:40-14:00		Lunch	Lunch	Lunch	Lunch	
14:00-14:20	T1	T2	Excursion	T4	T7	
14:20-14:40						
14:40-15:00						
15:00-15:20						
15:20-15:40						
15:40-16:00	Coffee	Coffee		Coffee		
16:00-16:20	T2: Regional and intercontinental modelling	Invited lecture (T3)		Invited lecture (T5)		
16:20-16:40		T3: Data assimilation and air quality forecasting		T5: Aerosols in the atmosphere		
16:40-17:00						
17:00-17:20						
17:20-17:40						
	19:30 Welcome Reception	18:00 – 20:00 Poster Session		19:00 Dinner		

Monday, 24th

08:30–09:40	Registration
09:40–10:00	Opening Session

TOPIC 1: LOCAL AND URBAN SCALE MODELLING

Chairperson: Bernard Fisher

Rapporteur: Helena Martins

10:00-10:40 1.1 On-line integrated meteorological and chemical transport modelling: advantages and pROspectives

Invited Lecture Alexander Baklanov, U. Korsholm

Coffee

Chairperson: Bernard Fisher

Rapporteur: Helena Martins

11:00-11:20 1.2 Modelling of the urban wind profile
Sven-Erik Gryning, Ekaterina Batchvarova

11:20-11:40 1.3 Development of a Lagrangian particle model for dense gas dispersion in urban environment
G. Tinarelli, D. Anfossi, S. Trini Castelli, A. Albergel, F. Ganci, G. Belfiore, J. Moussafir

11:40-12:00 1.4 CFD and Mesoscale air quality modelling integration: web application for Las Palmas (Canary Islands, Spain)
R. San José, J. L. Pérez, J.L. Morant, R.M. González

12:00-12:20 1.5 On the suppression of the urban heat island over mountainous terrain in winter
C. Chemel, J.-P. Chollet, E. Chaxel

Lunch

Chairperson: Domenico Anfossi

Rapporteur: Marina Astitha

14:00-14:20 1.6 Air quality management strategies in large cities: effects of changing the vehicle fleet composition in Barcelona and Madrid greater areas (Spain) by introducing natural gas vehicles
María Gonçalves, Pedro Jiménez-Guerrero, José M. Baldasano

14:20-14:40 1.7 Evaluation of the Hazard Prediction and Assessment Capability (HPAC) model with the Oklahoma City Joint Urban 2003 (JU2003) Tracer Observations
S. Hanna, J. Chang, J. White, J. Bowers

14:40-15:00 1.8 Origin and influence of PM₁₀ concentrations in urban and in rural environments
A. Kerschbaumer, R. Stern, M. Lutz

15:00-15:20	1.9	Development and application of MicroRMS modelling system to simulate the flow, turbulence and dispersion in the presence of buildings <u>S. Trini Castelli</u> , T. G. Reisin, G. Tinarelli
15:20-15:40	1.10	Numerical treatment of urban and regional scale interactions in chemistry-transport modelling <u>R. Wolke</u> , D. Hinneburg, W. Schröder, E. Renner

Coffee

TOPIC 2: REGIONAL AND INTERCONTINENTAL MODELLING

Chairperson: Douw Steyn

Rapporteur: Renske Timmermans

16:00-16:20	2.1	Contribution of biogenic emissions to carbonaceous aerosols in summer and winter in Switzerland: A modelling study <u>S. Andreani-Aksoyoğlu</u> , J. Keller, M. R. Alfarra, A.S.H. Prévôt, J.J. Sloan, Z. He
16:20-16:40	2.2	Regional chemical weather forecast over the central Japan: The effect of diffusion and mixing parameterization on the tracer transport from the planetary boundary layer to free troposphere <u>M. Niwano</u> , M. Takigawa, H. Akimoto, M. Takahashi, M. Teshiba
16:40-17:00	2.3	Regional Aerosol Optical Thickness Distribution Derived by CMAQ Model in the Siberian Forest Fire Emission episode of May 2003 H.-J. In, <u>Y. P. Kim</u> , K. H. Lee
17:00-17:20	2.4	Modelling the Deposition of Reduced Nitrogen at different scales in the United Kingdom <u>Anthony J. Dore</u> , Mark R. Theobald, Maciej Kryza, Massimo Vieno, Sim Y. Tang, Mark A. Sutton
17:20-17:40	2.5	Long-term simulations of surface ozone in East Asia during 1980 - 2020 with CMAQ and REAS inventory <u>T. Ohara</u> , K. Yamaji, I. Uno, J. Kurokawa, N. Horii, H. Akimoto

Tuesday, 25th

TOPIC 2: REGIONAL AND INTERCONTINENTAL MODELLING

(continued)

	Chairperson:	Guy Schayes
	Rapporteur:	Marje Prank
09:00-09:20	2.6	The modelling long range and transboundary transport of pollutant substances in the atmosphere <u>A. I. Degtiarev</u> , N. V. Degtiareva
09:20-09:40	2.7	The use of meso-scale atmospheric circulation types as a strategy for modelling long-term trends in air pollution. <u>Douw Steyn</u> , Bruce Ainslie, J.W. Kaminski, J.C. McConnell, Alberto Martilli, L. Neary
09:40-10:00	2.8	Development and application of biogenic emission term as a basis of long-range transport forecasts of allergenic pollen <u>Pilvi Siljamo</u> , Mikhail Sofiev, Tapio Linkosalo, Hanna Ranta
10:00-10:20	2.9	High Resolution Nested Runs of the AURAMS Model with comparisons to PrAIRie2005 field study data P. A. Makar, C. Stroud, B. Wiens, S. Cho, J. Zhang, M. Sassi, J. Liggio, M. Moran, <u>W. Gong</u> , S. Gong, S.M. Li, J. Brook, K. Strawbridge, K. Anlauf, C. Mihele, D. Toom-Sauntry
10:20-10:40	2.10	The effect of lateral boundary values on atmospheric mercury simulations with CMAQ <u>O. Russell Bullock, Jr.</u>

Coffee

	Chairperson:	ST Rao
	Rapporteur:	Pilvi Siljamo
11:00-11:20	2.11	Air pollution modelling with the use of perturbational downscaling <u>Eugene Genikhovich</u> , Mikhail Sofiev, Guy Schayes, Irene Gracheva
11:20-11:40	2.12	The Buncefield oil depot fire plume, an extreme accident without air quality consequences <u>R. Vautard</u> , P. Ciais, R. Fisher, D. Lowry, F.M. Bréon, F. Vogel, I. Levin, F. Miglietta, E. Nisbet
11:40-12:00	2.13	Forest fires impact on air quality over Portugal A.I. Miranda, A. Monteiro, V. Martins, <u>A. Carvalho</u> , M. Schaap, P. Builtjes, C. Borrego
12:00-12:20	2.14	The VetMet veterinary decision support system for airborne spread of animal diseases <u>J. H. Sørensen</u> , S. Alexandersen, P. Astrup, K. E. Christensen, T. Mikkelsen, S. Mortensen, T. S. Pedersen, S. Thykier-Nielsen
12:20-12:40	2.15	Development and verification of TAPM <u>P. J. Hurley</u>

Lunch

Chairperson:	Ashok Gadgil
Rapporteur:	Alexandre Caseiro
14:00-14:20	2.16 Development of fire emissions inventory using satellite data Biswadev A. Roy, George A. Pouliot, <u>J. David Mobley</u> , Thompson G. Pace, Thomas E. Pierce, Amber J. Soja, James J. Szykman, J. Al-Saadi
14:20-14:40	2.17 Toward a US National Air Quality Forecast Capability: Current and Planned Capabilities Paula Davidson; Kenneth Schere, Roland Draxler, Shobha Kondragunta, Richard A. Wayland, James F. Meagher, <u>Rohit Mathur</u>
14:40-15:00	2.18 Bi-directional Surface Chemical Fluxes for 2-Way Coupled Meteorology and Air Quality Modeling <u>Jonathan Pleim</u> , Jeffrey Young, David Wong, Rob Gilliam, William Hutzell, Tanya Otte, John Walker
15:00-15:20	2.19 Numerical Simulation of Air Pollution Transport under Sea/Land Breeze Situation in Jakarta, Indonesia in Dry Season <u>T. Kitada</u> , Asep Sofyan, G. Kurata
15:20-15:40	2.20 Synergetic or non-linear effects in PM ₁₀ and PM _{2.5} scenario calculations for 2015 in Belgium <u>Clemens Mensink</u> , Felix Deutsch, Jean Vankerkom, Liliane Janssen

Coffee

TOPIC 3: DATA ASSIMILATION AND AIR QUALITY FORECASTING

Chairperson:	Eberhard Renner
Rapporteur:	Santiago Saavedra
16:00-16:40	3.1 Rapid Data Assimilation in the Indoor Environment: theory and examples from real-time interpretation of indoor plumes of airborne chemicals <u>Ashok Gadgil</u>
16:40-17:00	3.2 Comparison of data assimilation methods for assessing PM ₁₀ exceedances on the European scale <u>Bruce Denby</u> , Martijn Schaap, Arjo Segers, Peter Builtjes, Jan Horálek
17:00-17:20	3.3 An Observing System Simulation Experiment (OSSE) for aerosols <u>Renske M.A. Timmermans</u> , Martijn Schaap, Arjo Segers, Hendrik Elbern, Richard Siddans, Stephen Tjemkes, Robert Vautard, Peter Builtjes
17:20-17:40	3.4 Modelling of Benzo(a)pyrene (BaP) depositions over North Sea coastal areas: impact of emissions from local and remote areas <u>I. Bewersdorff</u> , A. Aulinger, V. Matthias, M. Quante
18:00-20:00	Poster Session

Wednesday, 26th

TOPIC 3: DATA ASSIMILATION AND AIR QUALITY FORECASTING

(continued)

	Chairperson:	Alexander Baklanov
	Rapporteur:	E. Terrenoire
09:00-09:20	3.5	Estimation of sulphur and sulphate concentrations over Europe using LOTOS-EUROS model <u>A.L. Barbu Velicescu</u> , A.W. Heemink
09:20-09:40	3.6	Air quality forecasting during summer 2006: forest fires as one of major polluting sources in Europe <u>Mikhail Sofiev</u> , Pilvi Siljamo, Ari Karppinen, Jaakko Kukkonen
09:40-10:00	3.7	Comparison of Methods to Generate Meteorological Inputs for Modeling Dispersion in Coastal Urban Areas <u>Akula Venkatram</u> , Wenjun Qian, Tao Zhan, Marko Princevac
10:00-10:20	3.8	Developing a method for resolving NO _x emission inventory biases using discrete Kalman filter inversion, direct sensitivities, and satellite-based NO ₂ columns <u>S.L. Napelenok</u> , R.W. Pinder, A.B. Gilliland, R.V. Martin
10:20-10:40	3.9	A suggested correction to the EMEP database, regarding the location of a major industrial air pollution source in Kola Peninsula <u>M. Kaasik</u> , M. Prank, J. Kukkonen, M. Sofiev

Coffee

	Chairperson:	José Baldasano
	Rapporteur:	Claudio Carnevale
11:00-11:20	3.10	Enhanced ozone spatial fields: comparison of techniques E. Gégo, <u>P.S. Porter</u> , V. Garcia, C. Hogrefe, J. Swall, A. Gilliland, S.T. Rao
11:20-11:40	3.11	Estimation of regional CO ₂ fluxes in northern Wisconsin using the ring of towers concentration measurements <u>Marek Uliasz</u> , A. Scott Denning, Cathy Corbin

TOPIC 6 INTERACTIONS BETWEEN AIR QUALITY AND CLIMATE CHANGE

	Chairperson:	José Baldasano
	Rapporteur:	Claudio Carnevale
11:40-12:00	6.1	Linking global and regional models to simulate U.S. air quality in the year 2050 <u>C. Nolte</u> , A. Gilliland, C. Hogrefe
12:00-12:20	6.2	Impacts of climate change on air pollution levels in the northern hemisphere with special focus on Europe and the Arctic <u>G. B. Hedegaard</u> , J. Brandt, J. H. Christensen, L. M. Frohn, C. Geels, K. M. Hansen, M. Stendel
12:20-12:40	6.3	Regional climate change impacts on air quality in CECILIA EC 6FP Project <u>T. Halenka</u> , P. Huszar, M. Belda

Lunch

Thursday, 27th

TOPIC 4: MODEL ASSESSMENT AND VERIFICATION

Chairperson: Michael Brauer

Rapporteur: Anabela Carvalho

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| 09:00-09:20 | 4.1 | The effect of heterogeneous reactions on model performance for nitrous acid
<u>Golam Sarwar</u> , Robin L. Dennis, Bernhard Vogel |
| 09:20-09:40 | 4.2 | Saharan dust over the Eastern Mediterranean in Spring 2006: Model sensitivity
<u>P. Kishcha</u> , S. Nickovic, E. Ganor, L. Kordov, P. Alpert |
| 09:40-10:00 | 4.3 | Air Quality Ensemble Forecast coupling ARPEGE and CHIMERE over Western Europe
<u>Ana C. Carvalho</u> , Laurent Menut, Robert Vautard, Jean Nicolau |
| 10:00-10:20 | 4.4 | Uncertainty in air quality decision making
<u>B.E.A. Fisher</u> |
| 10:20-10:40 | 4.5 | Application of advanced particulate matter source apportionment techniques in the Northern Italy Basin
M. Bedogni, S. Casadei, <u>G. Pirovano</u> , G. Sghirlanzoni, A. Zanoni |

Coffee

Chairperson: Sven-Erick Gryning

Rapporteur: Joana Soares

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|-------------|------|---|
| 11:00-11:20 | 4.6 | How the performance of regional-scale photochemical modelling systems changed over the past decade?
<u>C. Hogrefe</u> , J.-Y. Ku, G. Sistla, A. Gilliland, J.S. Irwin, P.S. Porter, E. Gégó, P. Kasibhatla, S.T. Rao |
| 11:20-11:40 | 4.7 | Application of a regional atmospheric emission inventory to ozone and PM modelling over the French North region
<u>E. Terrenoire</u> , V. Fèvre-Nollet |
| 11:40-12:00 | 4.8 | Evaluating regional-scale air quality models
Alice Gilliland, James Godowitch, Christian Hogrefe, <u>S.T. Rao</u> |
| 12:00-12:20 | 4.9 | Ozone modeling over Italy: a sensitivity analysis to precursors using BOLCHEM air quality model
A. Maurizi, <u>M. Mircea</u> , M. D'Isidoro, L. Vitali, G. Zanini |
| 12:20-12:40 | 4.10 | Modeling evaluation of PM ₁₀ exposure in Northern Italy in the framework of CityDeltaIII project
<u>C. Carnevale</u> , G. Finzi, E. Pisoni, M. Volta |

Lunch

Chairperson: Nadine Chaumerliac

Rapporteur: João Santos

- 14:00-14:20 4.11 Comprehensive Surface-Based Performance Evaluation of a Size- and Composition-Resolved Regional Particulate-Matter Model for a One-Year Simulation
M.D. Moran, Q. Zheng, M. Samaali, J. Narayan, R. Pavlovic, S. Cousineau, V.S. Bouchet, M. Sassi, P.A. Makar, W. Gong, S. Gong, C. Stroud, A. Duhamel
- 14:20-14:40 4.12 Comparison of six widely-used dense gas dispersion models for three actual chlorine railcar accidents
S. Hanna, S. Dharmavaram, J. Zhang, I. Sykes, H. Witlox, S. Khajehnajafi, K. Koslan
- 14:40-15:00 4.13 A statistical approach for the spatial representativeness of air quality monitoring stations and the relevance for model validation
S. Janssen, F. Deutsch, G. Dumont, F. Fierens, C. Mensink
- 15:00-15:20 4.14 Estimation of the modelling uncertainty related with stochastic processes
O. Tchepe, A. Monteiro, C. Borrego
- 15:20-15:40 4.15 Development of a New Canadian Operational Air Quality Forecast Model
D. Talbot, M.D. Moran, V. Bouchet, L.-P. Crevier, S. Ménard, A. Kallaur

Coffee

TOPIC 5: AEROSOLS IN THE ATMOSPHERE

Chairperson: Carlos Borrego

Rapporteur: Gitte Hedegaard

- 16:00-16:40 5.1 Predicting air quality : current status and future directions
Invited Lecture Gregory R. Carmichael, Adrian Sandu, Tianfeng Chai, Dacian N. Daescu, Emil M. Constantinescu, Youhua Tanga
- 16:40-17:00 5.3 Heterogeneous chemical processes and their role on particulate matter formation in the Mediterranean region
M. Astitha, G. Kallos, P. Katsafados, E. Mavromatidis
- 17:00-17:20 5.7 The origins and formation mechanisms of aerosols during a measurement campaign in Finnish Lapland, evaluated using the regional dispersion model SILAM
M. Prank, M. Sofiev, M. Kaasik, T. Ruuskanen, J. Kukkonen, M. Kulmala

Friday, 28th

TOPIC 5: AEROSOLS IN THE ATMOSPHERE

(continued)

Chairperson: Gregory Carmichael

Rapporteur: Ines Bewersdorff

- 09:00-09:20 5.2 Diagnostic analysis of the three-dimensional sulfur distributions over the eastern United States using the CMAQ model and measurements from the 2004 ICARTT field experiment
Rohit Mathur, Shawn Roselle, George Pouliot
- 09:20-09:40 5.4 Regional coverage modelling of marine aerosols concentration in the French Mediterranean coastal area
R. Blot, G. Tedeschi, J. Piazzola
- 09:40-10:00 5.5 Formation and dispersion of secondary inorganic aerosols by high ammonia emissions simulated by LM/MUSCAT
Eberhard Renner, Ralf Wolke
- 10:00-10:20 5.8 Modelling Regional Aerosols: Impact of cloud processing on gases and particles over eastern North America and in its outflow during ICARTT 2004
W. Gong, J. Zhang, M.D. Moran, P.A. Makar, S.L. Gong, C. Stroud, V.S. Bouchet, S. Cousineau, S. Ménard, M. Samaali, M. Sassi, B. Pabla, R. Leaitch, A.M. Macdonald, K. Anlauf, K. Hayden, D. Toom-Sauntry, A. Leithead, J.W. Strapp
- 10:20-10:40 5.9 On the role of ammonia in the formation of PM_{2.5}
C. Mensink, F. Deutsch

Coffee

TOPIC 7: AIR QUALITY AND HUMAN HEALTH

Chairperson: Ana Isabel Miranda

Rapporteur: Andy Delcloo

- 11:00-11:40 7.1 Models of exposure for use in epidemiological studies of air pollution health impacts
Invited Lecture Michael Brauer, Bruce Ainslie, Michael Buzzelli, Sarah Henderson, Tim Larson, Julian Marshall, Elizabeth Nethery, Douw Steyn, Jason Su
- 11:40-12:00 7.2 Long-Term Regional Air Quality modelling in Support of Health Impact Analyses
C. Hogrefe, B. Lynn, K. Knowlton, R. Goldberg, C. Rosenzweig, P.L. Kinney
- 12:00-12:20 7.3 A modeling methodology to support evaluation of public health impacts of air pollution reduction programs
V. Isakov, H. Özkaynak

12:20-12:40 7.4 Evaluating the effects of emission reductions on multiple pollutants simultaneously
Deborah Luecken, Cynthia Stahl, Al Cimorelli

Lunch

TOPIC 7: AIR QUALITY AND HUMAN HEALTH

(continued)

Chairperson: Peter Builtjes

Rapporteur: Sergey Napelenok

14:00-14:20 7.5 Modelling of the exposure of urban populations to PM_{2.5}, NO₂ and O₃, and applications in the Helsinki Metropolitan Area in 2002 and 2025
J. Kukkonen, P. Aarnio, A. Kousa, A. Karppinen, K. Riikonen, B. Alaviippola, M. Kauhaniemi, J. Soares, T. Erolähde, T. Koskentalo

14:20-14:40 7.6 The Importance of Exposure in Addressing Current and Emerging Air Quality Issues
T. Watkins, R. Williams, A. Vette, J. Burke, B.J. George, V. Isakov

14:40-15:00 7.7 The Urban Increment of PM₁₀ and PM_{2.5} based on modelling and observations
Arno Graff, Rainer Stern, Peter Builtjes

Posters

TOPIC 1: LOCAL AND URBAN SCALE MODELLING

- P 1.1 Finite volume microscale air-flow modelling using the immersed boundary method
V. Fuka, J. Brechler
- P 1.2 Simplified models for integrated air quality management in urban areas
B. Sivertsen, A. Dudek, C. Guerreiro
- P 1.3 On the consideration of the nonlocal effects on some dynamic and dispersion characteristics in conventionally neutral and long-lived stable PBL
E. Syrakov, E. Cholakov, M. Tsankov
- P 1.4 A comparison using a CFD code and ADMS with wind tunnel data for the modelling of dispersion around a nuclear power plant
Emmanuel Demael, Eric Gilbert, Bertrand Carissimo
- P 1.5 Assessment of the breathability in urban canyons through CFD simulations and its application to sustainable urban design
Mário Tomé, Ricardo J. Santos, António Martins, Mário Russo
- P 1.6 Inter-comparison of Gaussian Plume, Street Canyon and CFD models for predicting ambient concentrations of NO_x and NO₂ at urban road junctions
R. Hill, P. Jenkinson, E. Lutman

TOPIC 2: REGIONAL AND INTERCONTINENTAL MODELLING

- P 2.1 Local to Regional Dilution and Transformation Processes of the Emissions From the Road Transport
D. Syrakov, K. Ganev, R. Dimitrova, A. Todorova, M. Prodanova, N. Miloshev
- P 2.2 Application of back trajectories using flextra to identify the origin of ¹³⁷Cs measured in the city of Barcelona
D. Arnold, A. Vargas, P. Seibert, X. Ortega
- P 2.3 The role of sea-salt emissions in air quality models
R. Arasa, M.R. Soler, S. Ortega
- P 2.4 SPECIATE - EPA's Database of Speciated Emission Profiles
J. David Mobley, Lee L. Beck, Golam Sarwar, Adam Reff, Marc Houyoux
- P 2.5 Regional Transport of Tropospheric Ozone: A Case Study in the Northwest Coast of Iberian Peninsula
S. Saavedra, M. R. Méndez, J.A. Souto, J.L. Bermúdez, M. Vellón, M. Costoya
- P 2.6 Modelling of atmospheric transport of POPs at the European scale with a 3D dynamical model Polair3D-POP
S. Quéguiner, L. Musson-Genon

- P 2.7 Evolution of the ozone episodes in northern Iberia (Cantabric and Pyrenaic regions) under West European Atlantic blocking anticyclones
V. Valdenebro, G. Gangoiti, A. Albizuri, L. Alonso, M. Navazo, J. A. García, M. M. Millán
- P 2.8 High temporal resolution measurements and numerical simulation of ozone precursors in a rural background station
M. Navazo, N. Durana, L. Alonso, J. Iza, J. A. García, J.L. Iardía, G. Gangoiti, M. De Blas
- P 2.9 A study on nonlinearity in source-receptor relationship for sulfur and nitrate in East Asia
Woo-Sub Roh, Seung-Bum Kim, Tae-Young Lee
- P 2.10 Modelling the impact of best available techniques for industrial emissions control in air quality: I. Setting up inventories and establishing projections
R. Rodriguez, P. Maceira, J.A. Souto, J. Casares, A. Sáez, M. Costoya
- P 2.11 Lake Breezes in Southern Ontario: Observations, Models and Impacts on Air Quality
D. Flagg, J. Brook, D. Sills, P. Makar, P. Taylor, G. Harris, R. McLaren, P. King
- P 2.12 High time and space resolution ozone modelling in regional air quality management of a complex mountain area using Calgrid 2.44
C. Trozzi, S. Villa, E. Piscitello
- P 2.13 Analysis of atmospheric transport of radioactive debris related to nuclear bomb tests performed at Novaya Zemlya
J. Saltbones, J. Bartnicki, T. Bergan, B. Salbu, B. Røsting, H. Haakenstad
- P 2.14 Development and application of a new model for the atmospheric transport and surface exchange of semi-volatile organics using the CMAQ model framework
Fan Meng, Baoning Zhang, Fuquan Yang, James Sloan

TOPIC 3: DATA ASSIMILATION AND AIR QUALITY FORECASTING

- P 3.1 Detection of a possible source of air pollution using a combination of measurements and inverse modelling
B. Rajkovic, Z. Grsic, M. Vujadinovic
- P 3.2 Synchronization of ozone air quality and NO_x emissions from Electrical Generating Units in the U.S.
P.S. Porter, E.Gégo, A. Gilliland, C. Hogrefe, S.T. Rao
- P 3.3 Improving emission inventory in Lithuania
V. Ulevicius, V. Vebra, K. Senuta, K. Plauskaite

TOPIC 4: MODEL ASSESSMENT AND VERIFICATION

- P 4.1 Tropospheric ozone and biogenic emissions in the Czech Republic
K. Zemankova, J. Brechler
- P 4.2 Air pollution dispersion modelling around Thermal power plant Trbovlje in complex terrain – model verification and regulatory planning
Marija Zlata Božnar, Primož Mlakar, Boštjan Grašič, Gianni Tinarelli
- P 4.3 Development of a quasi-real-time forecasting over Tokyo
M. Takigawa, M. Niwano, H. Akimoto, M. Takahashi
- P 4.4 A construction and evaluation of Eulerian dynamic core for the emergency and air quality modelling system SILAM
Mikhail Sofiev, Michael Galerin, Eugene Genikhovich
- P 4.5 BOLCHEM air quality model: performance evaluation over Italy
A. Maurizi, M. Mircea, M. D'Isidoro, L. Vitali, G.Zanini
- P 4.6 Evaluation of an operational ensemble prediction system for ozone concentrations over Belgium using the CTM CHIMERE
A.W. Delcloo, O. Brasseur
- P 4.7 On the importance of brake wear as a source of atmospheric copper concentrations
M. Schaap, J.H.J. Hulskotte, A.J.H. Visschedijk, H.A.C. Denier van der Gon
- P 4.8 The use of MM5-CMAQ-EMIMO modelling system (OPANA V4) for air quality impact assessment applications for combined cycle power plants and refineries (Spain)
R. San José, J.L. Pérez, J.L. Morant and R.M. González
- P 4.9 Verification of ship plumes modeling and their impacts on air quality and climate change in QUANTIFY EC 6FP Project
T. Halenka, P. Huszar, M. Belda

TOPIC 5: AEROSOLS IN THE ATMOSPHERE

- P 5.1 Quantifying source contributions to ambient particulate matter in Austria with chemical mass balance receptor modelling.
Alexandre Caseiro, Heidi Bauer, Iain Marr, Casimiro Pio, Hans Puxbaum, Vasil Simeonov

TOPIC 6: INTERACTIONS BETWEEN AIR QUALITY AND CLIMATE CHANGE

- P 6.1 On the Effective Indices for Emissions From Road Transport
Kostadin Ganev, Dimiter Syrakov, Zahari Zlatev

TOPIC 7: AIR QUALITY AND HUMAN HEALTH

- P 7.1 A Multi-objective problem to select optimal PM₁₀ control policies
C. Carnevale, E. Pisoni, M. Volta
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