CWE2010 (The Fifth Fifth International Symposium on Computational Wind Engineering, Chapel Hill, North Carolina, USA, May 23-27, 2010) 拡散関係の発表

TS 5-1. Pollutant Dispersion I: Application of CFD to Practical Environmental Assessment in the Atmosphere
Monday, May 24, 2010, 12:40 – 14:40

12:40 – 12:55
Numerical simulation model of atmospheric flow and stack gas diffusion under building and terrain conditions and comparison with wind tunnel experiment

Presenter:	Koichi Sada
Author(s):	Koichi Sada, Central Research Institute of Electric Power Industry, Japan
	Takenobu Michioka, Central Research Institute of Electric Power Industry, Japan

12:55 – 13:10
Application of CFD to assessment of roadside air quality

Presenter:	Akiyoshi Ito
Author(s):	Akiyoshi Ito, Japan Automobile Research Institute, Japan

13:10 – 13:25
Development of a Lagrangian/Eulerian hybrid atmospheric dispersion model around buildings

Presenter:	Ryohji Ohba
Author(s):	Hong Huang, Tsinghua University, China
	Shifei Shen, Tsinghua University, China
	Tomohiro Hara, Mitsubishi Heavy Industries LTD, Nagasaki R&D Center, Japan
	Kazuki Okabayashi, Mitsubishi Heavy Industries LTD, Nagasaki R&D Center, Japan
	Ryohji Ohba, Mitsubishi Heavy Industries LTD, Nagasaki R&D Center, Japan

13:25 – 13:40
Numerical simulation of tracer gas diffusion in real street canyons considering fluctuation in wind direction

Presenter:	Koji Kitabayashi
Author(s):	Koji Kitabayashi, Suuri-Keikaku Co Ltd, Japan
	Tuyoshi Murao, Jatco Co Ltd, Japan
	Yasuyuki Chiba, Kanto Automobile Co Ltd, Japan

13:40 – 13:55
Exhaust dispersion modeling: a comparison of wind tunnel, CFD and AERMOD modeling approaches

Presenter:	Alexy Kolesnikov
Author(s):	Alexy Kolesnikov, CPP Inc, USA

13:55 – 14:10
Investigation into applicability of DiMCFD to atmospheric environmental assessment

Presenter:	Hiroaki Kondo
Author(s):	Mizuno Tateki, Japan Weather Association, Japan
	Hiroaki Kondo, National Institute of Advanced Industrial Science and Technology (AIST), Japan
	Kenji Horiuchi, Institute Research & Development Co Ltd, Japan
	Yoneko Hirano, Environmental Technical Laboratory Ltd, Japan
	Norihisa Maeyama, Japan Weather Association, Tokyo, Japan
	Kazuhiko Ogata, Suuri-Keikaku Co Ltd, Japan
	Satoru Iizuka, Nagoya University, Japan

14:10 – 14:25
Microscale modeling of winds and airborne pollution dispersion in urban areas: developments and applications for New York City

Presenter:	Alan Huber
Author(s):	Alan Huber, University of North Carolina at Chapel Hill, USA
	Matthew J. Freeman, Lockheed Martin Corporation, USA
	Wei Tang, Lockheed Martin Corporation, USA

14:25 – 14:40
Computational fluid dynamics modeling of the flow and dispersion of emissions from the New York City WTC rubble pile following events on Sept.11, 2001: comparisons with wind tunnel model measurements

Presenter:	Alan Huber
Author(s):	Alan Huber, University of North Carolina at Chapel Hill, USA
	Matthew J. Freeman, Lockheed Martin Corporation, USA
	Steven G. Perry, U.S. Environmental Protection Agency, National Exposure Research Laboratory, USA
	David K. Heist, U.S. Environmental Protection Agency, National Exposure Research Laboratory, USA

TS 5-2. Pollutant Dispersion II: State of the Art in Computational Evaluation of Dispersion of Building Exhaust and Potential Re-ingestion

Monday, May 24, 2010, 15:00 – 17:00

15:00 – 15:15
Near-field pollutant dispersion in the built environment by CFD and wind tunnel simulations

Presenter:	Mauricio Chavez
Author(s):	Mauricio Chavez, Concordia University, Canada
	Bodhisatta Hajra, Concordia University, Canada
	Ted Stathopoulos, Concordia University, Canada
	Ali Bahloul, IRSST, Canada

15:15 – 15:30
Large eddy simulation of flow and dispersion in the wake of a rectangular building

Presenter:	Catherine Gorlé
Author(s):	Catherine Gorlé, von Karman Institute for Fluid Dynamics, Belgium
	Patrick Rambaud, von Karman Institute for Fluid Dynamics, Belgium
	Jeroen van Beeck, von Karman Institute for Fluid Dynamics, Belgium

15:30 – 15:45
CFD simulation of pollutant dispersion around buildings: comparison between RANS k-epsilon and LES approaches

Presenter:	Pierre Gousseau
Author(s):	Pierre Gousseau, Eindhoven University of Technology, The Netherlands
	Bert Blocken, Eindhoven University of Technology, The Netherlands
	Ted Stathopoulos, Concordia University, Canada
	GertJan van Heijst, Eindhoven University of Technology, The Netherlands

15:45 – 16:00
Influence of turbulence models on pollutant dispersion studies in urban environments

Presenter:	Christian Masson
Author(s):	Mohamed Lateb, ÉTS (École de technologie supérieure), Canada
	Christian Masson, ÉTS (École de technologie supérieure), Canada
	Ted Stathopoulos, Concordia University, Canada
	Claude Bédard, ÉTS (École de technologie supérieure), Canada

16:00 – 16:15
Numerical modeling of gas dispersion from a large multifunctional stadium in an urban environment and validation with full-scale measurements

Presenter:	Twan van Hooff
Author(s):	Twan van Hooff, Eindhoven University of Technology, The Netherlands
	Bert Blocken, Eindhoven University of Technology, The Netherlands

16:15 – 16:30
CFD modeling of pollution dispersion and comparison with measurements in a street canyon

Presenter:	Yoshihide Tominaga
Author(s):	Yoshihide Tominaga, Niigata Institute of Technology, Japan

16:30 – 16:45
CFD prediction of dense gas clouds spreading in a mock urban environment

Presenter:	Robert Meroney
Author(s):	Robert Meroney, Colorado State University, USA

TS 5-3. Pollutant Dispersion III: Rapid CFD and CFD-like Transport and Dispersion Models

Tuesday, May 25, 2010, 10:30 – 12:30

10:30 – 10:45
Modelling concentration fluctuations and individual exposure in complex urban environments

Presenter:	John Bartzis
Author(s):	John Bartzis, University of West Macedonia, Greece
	George C. Efthimiou, University of West Macedonia, Greece
	Nektarios Koutsourakis, University of West Macedonia, Greece

10:45 – 11:00
A non-CFD modeling system for computing 3D wind and concentration fields in urban environments

Presenter:	Michael Brown
Author(s):	Michael Brown, Los Alamos National Laboratory, USA
	Matt Nelson, Los Alamos National Laboratory, USA
	Mike Williams, Los Alamos National Laboratory, USA
	Akshay Gowardhan, Los Alamos National Laboratory, USA
	Eric Pardyjak, University of Utah, USA

11:00 – 11:15
A CFD-based wind solver for a fast response transport and dispersion model

Presenter:	Akshay Gowardhan
Author(s):	Akshay Gowardhan, Los Alamos National Laboratory, USA
	Eric Pardyjak, University of Utah, USA
	Inanc Senocak, Boise State University, USA
	Michael Brown, Los Alamos National Laboratory, USA

11:15 – 11:30
Validation and sensitivity testing of CityZoom-AERMOD model

Presenter:	Pablo Grazziotin
Author(s):	Pablo Grazziotin, University of Nottingham, United Kingdom
	Herve Morvan, University of Nottingham, United Kingdom
	David Hargreaves, University of Nottingham, United Kingdom
	Benamy Turkienicz, Universidade Federal do Rio Grande do Sul -UFRGS, Brazil
	Helena Cybis, Universidade Federal do Rio Grande do Sul - UFRGS, Brazil

11:30 – 11:45
An inter-comparison of three urban wind models with Oklahoma City Joint Urban 2003 experiment wind measurements

Presenter:	Marina Neophytou
Author(s):	Marina Neophytou, University of Cyprus, Cyprus
	Michael Brown, Los Alamos National Laboratory, USA
	Akshay Gowardhan, Los Alamos National Laboratory, USA

11:45 – 12:00
RUSTIC/MESO, a rapid transport and dispersion modeling system

Presenter:	Jason Roney
Author(s):	Jason Roney, ITT Advanced Engineering and Sciences, USA
	Don Burrows, ITT Advanced Engineering and Sciences, USA
	Chuck Tobin, ITT Advanced Engineering and Sciences, USA

12:00 – 12:15
Virtual Chemical and Biological (CB) agent data set generation to support the evaluation of CB contamination avoidance systems

Presenter:	George Bieberbach
Author(s):	George Bieberbach, National Center for Atmospheric Research, USA
	Paul E. Bieringer, National Center for Atmospheric Research, USA
	Andrzej Wyszogrodzki, National Center for Atmospheric Research, USA
	Jeffrey Weil, National Center for Atmospheric Research, USA
	Ryan Cabell, National Center for Atmospheric Research, USA
	Jonathan Hurst, National Center for Atmospheric Research, USA

12:15 – 12:30
Operational generation of urban wind fields to support transport and dispersion modeling

Presenter:	Jeffrey Copeland
Author(s):	Jeffrey Copeland, STAR Institute, USA

TS 5-4. Pollutant Dispersion IV

Wednesday, May 26, 2010, 13:40 – 15:40

13:40 – 13:55

Do airplane source dynamics have to be accounted for in an Eulerian atmospheric dispersion model for airport applications?

Presenter:	Malte Uphoff
Author(s):	Malte Uphoff, University of Hamburg, Germany
	K. Heinke Schlünzen, University of Hamburg, Germany

13:55 – 14:10

Evaluation of the desert tortoise ammonia field tests with the FLUENT CFD model using unsteady RANS

Presenter:	Christopher DesAutels
Author(s):	Christopher DesAutels, TRC, USA
	Lloyd L. Schulman, TRC, USA

14:10 – 14:25

The effect of house model detail and the presence of an acoustic barrier on prediction of pollutant dispersion from a roadway using CFD

Presenter:	Peter Kriznic
Author(s):	Peter Kriznic, Synergetics Pty Ltd, Australia
	David Featherston, Synergetics Pty Ltd, Australia

14:40 – 14:55

Numerical modelling of pollution dispersion from partly open industrial halls using a Lagrangian particle tracking method

Presenter:	Cornelia Wevers
Author(s):	Cornelia Wevers, Ruhr-Universität Bochum, Germany
	Jörg Franke, University of Siegen, Germany
	Rüdiger Höffer, Ruhr-Universität Bochum, Germany
	Achim Hugo, Institute of Energy and Environmental Technology e.V., Duisburg, Germany

14:55 – 15:10

Study on improving the numerical stability of an algorithm to identify pollutant sources by reverse simulation

Presenter:	Satoshi Abe
Author(s):	Satoshi Abe, The University of Tokyo, Japan
	Shinsuke Kato, The University of Tokyo, Japan

15:10 – 15:25

Pollution dispersion simulations of the MUST case using anisotropic turbulent scalar fluxes models

Presenter:	Rafael Izarra-Garcia
Author(s):	Rafael Izarra-Garcia, University of Siegen, Germany
	Jörg Franke, University of Siegen, Germany
	Wolfram Frank, University of Siegen, Germany

15:25 – 15:40

Computational fluid dynamics modeling to assess the impact of roadside barriers on near-road air quality

Presenter:	Gayle Hagler
Author(s):	Gayle Hagler, U.S. Environmental Protection Agency, National Risk Management Research Laboratory, USA
	Wei Tang, Lockheed Martin Corporation, USA
	Matthew J. Freeman, Lockheed Martin Corporation, USA
	David K. Heist, U.S. Environmental Protection Agency, National Exposure Research Laboratory, USA
	Steven G. Perry, U.S. Environmental Protection Agency, National Exposure Research Laboratory, USA
	Alan F. Vette, U.S. Environmental Protection Agency, National Exposure Research Laboratory, USA

TS 3-3. Model Evaluation for Flow and Dispersion Processes in Urban Environments

Wednesday, May 26, 2010, 10:30 – 12:30

10:30 – 10:45
Background and justification document to support the model evaluation guidance and protocol of microscale meteorological models

Presenter:	Rex Britter
Author(s):	Rex Britter, Massachusetts Institute of Technology, USA
	Michael Schatzmann, University of Hamburg, Germany
	Ana Margarida Costa, University of Aveiro, Portugal

10:45 – 11:00
COST 732: the model evaluation guidance and protocol document

Presenter:	Rex Britter
Author(s):	Rex Britter, Massachusetts Institute of Technology, USA
	Michael Schatzmann, University of Hamburg, Germany

11:00 – 11:15
The best practice guideline for the CFD simulation of flows in the urban environment: an outcome of COST 732

Presenter:	Bertrand Carissimo
Author(s):	Jörg Franke, University of Siegen, Germany
	Antti Hellsten, Finnish Meteorological Institute, Finland
	Heinke Schlünzen, University of Hamburg, Germany
	Bertrand Carissimo, CEREA-ENPC-EDF R&D, France

11:15 – 11:30
Analyses, critical issues and outcome from COST732 CFD evaluation exercise

Presenter:	Silvana Di Sabatino
Author(s):	Silvana Di Sabatino, Scienza dei Materiali Università del Salento, Italy

11:30 – 11:45
Validation data for urban flow and dispersion models - Are wind tunnel data qualified?

Presenter:	Bernd Leitl
Author(s):	Bernd Leitl, University of Hamburg, Germany
	Michael Schatzmann, University of Hamburg, Germany

11:45 – 12:00
COST 732 model evaluation case studies: CFD RANS models applied to MUST and Oklahoma City data

Presenter:	Jörg Franke
Author(s):	Jörg Franke, University of Siegen, Germany

12:00 – 12:15
CFD simulations of gas dispersion around high-rise building in non-isothermal boundary layer

Presenter:	Ryuichiro Yoshie
Author(s):	Ryuichiro Yoshie, Tokyo Polytechnic University, Japan
	Jiang Guoyi, Tokyo Polytechnic University, Japan
	Taich Shirasawa, Otsuma Women's University, Japan
	Jaeyong Chung, Tokyo Polytechnic University, Japan