



Action ES1006  
Earth System Science and  
Environmental Management

## List of publications

### 2015

S. Trini Castelli, Baumann-Stanzer K., Leitl B., Berbekar E., Rakai A., Fuka V., Hellsten A., Milliez M., Petrov A., Efthimiou G., Andronopoulos S., Tinarelli G., Tavares R., Armand P., Gariazzo C., Jurcakova K., Gašparac G., Nibart M., 2015. [Evaluation of local-scale models for accidental releases in built environments – results of the modelling exercises in COST Action ES1006](#). *Air Pollution Modeling and its Application XXIV*, D. Steyn and N. Chaumerliac (eds.) Springer Proceedings in Complexity, Springer International Publishing Switzerland, in press.

T.G. Reisin, B. Leitl, S. Trini Castelli, K. Baumann-Stanzer, P. Armand, F. Barmpas, M. Balczo, S. Andronopoulos, K. Jurcakova and all COST ES1006 Members, 2015. [Evaluation, Improvement and Guidance for the Use of Local-Scale Emergency Prediction and Response Tools for Airborne Hazards in Built Environments. COST Action ES100 – A European Experience](#). *Proceedings of the NATO ADVANCED RESEARCH WORKSHOP: Preparedness for Nuclear and Radiological Threats*, in press, 9 pages.

B. Leitl, S. Trini-Castelli, K. Baumann-Stanzer, 2015. [Validierung von Modellen zur Simulation von Gefahrenstoffausbreitung in komplexen urbanen Strukturen – Inhalte und Ergebnisse der COST-Action ES 1006](#). *Annalen der Meteorologie*, 47, 28-29.

K. Baumann-Stanzer, G. Rau, C. Flandorfer, B. Leitl, S. Trini Castelli, E. Berbekar, K. Jurcakova, V. Fuka, G. Tinarelli, A. Petrov und alle COST ES1006 Mitglieder, 2015. [COST Action ES1006 – Evaluierung atmosphärischer Ausbreitungsmodelle für unfallbedingte Freisetzungen in Städten oder Industriegebieten](#). *Annalen der Meteorologie*, 47, 91-92.

Fuka, V., 2015, [PoisFFT – A Free Parallel Fast Poisson Solver](#), *Applied Mathematics and Computation*, DOI: 10.1016/j.amc.2015.03.011, in press, available online.

G. Efthimiou, E. Berbekar, F. Harms, J. Bartzis, B. Leitl, 2015. [Prediction of the peak concentration and concentration distribution of a continuous point source release in a semi-idealized urban canopy using CFD-RANS modelling](#). *Atmospheric Environment*, 100, 48-56.

J. G. Bartzis, G. C. Efthimiou, S. Andronopoulos, 2015. Modelling Short Term Individual Exposure and Extreme Dosage from Airborne Hazardous Releases in Urban Environments, *Journal of Hazardous Materials*, submitted.



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## 2014

C. Gariazzo, B. Leidl, S. Trini Castelli, K. Baumann-Stanzer, T.G. Reisin, F. Barmpas, G. Tinarelli, M. Milliez, E. Bemporad, P. Armand, 2014. [COST Action ES1006. Evaluation, Improvement and Guidance of Local-Scale Emergency Prediction and Response Tools for Airborne Hazards in Built Environments: Ongoing Activities, Experiments and Recent Results.](#) *Chemical Engineering Transactions*, 36, 529-534.

S. Trini Castelli, B. Leidl, K. Baumann-Stanzer, T. G. Reisin, P. Armand, F. Barmpas, M. Balczó, S. Andronopoulos, K. Jurcakova, all COST ES1006 Members, 2014. [Updates on COST Action ES1006. Evaluation, improvement and Guidance for the use of local-scale emergency prediction and Response tools for airborne hazards in built environments.](#) *Proceedings of the 16th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 689-693.

K. Baumann-Stanzer, B. Leidl, S. Trini Castelli, C. M. Milliez, E. Berbekar, A. Rakai, V. Fuka, A. Hellsten, A. Petrov, G. Efthimiou, S. Andronopoulos, G. Tinarelli, R. Tavares, P. Armand, C. Gariazzo, all COST ES1006 Members, 2014. [Evaluation of local-scale models for accidental releases in built Environments – results of the “Michelstadt exercise” in COST Action ES1006.](#) *Proceedings of the 16th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 699-703.

R. Tavares, K. Baumann-Stanzer, B. Leidl, S. Trini Castelli, all COST ES1006 Members, 2014. [ERMIDT – the emergency response models and computational tools Inventory database developed in the frame of in COST Action ES1006.](#) *Proceedings of the 16th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 720-724.

C. Duchenne, P. Armand, A. Napoly, M. Milliez, B. Carissimo, 2014. [Comparison of simplified and full CFD modelling of accidental dispersion: Application to the 2013 Michelstadt experimental trials.](#) 655-660

Fuka, V., Brechler, J., 2014, [Large Eddy Simulation of Accidental Releases of Hazardous Substances in Idealized Urban Geometry.](#) *Proceedings of the 16th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 709-711.

E. Berbekar, Frank Harms, Bernd Leidl, 2014. [Wind tunnel measurements of accidental gas releases in a simplified urban environment.](#) *Proceedings of the 16th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 661-665.

K. Baumann-Stanzer, B. Leidl, S. Trini Castelli, M. Milliez, G. Rau and all COST ES1006 Members, 2014. [Local-scale modelling of accidental releases in built environments - selected results of the 'Michelstadt' model evaluation exercise in COST Action ES1006.](#) *Proceedings of the 9th International Conference on Air Quality - Science and Application*, 108.

G. Efthimiou, J. Bartzis, E. Berbekar, D. Hertwig, F. Harms, B. Leidl, 2014. Modeling Short-Term Individual Exposure from Airborne Hazardous Releases in Urban Environments. Part II: Validation of a Deterministic Model with Wind Tunnel Experimental Data. *Toxics*, Submitted.



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- B. Leidl, S. Trini Castelli K. Baumann-Stanzer, T.G. Reisin, F. Barmpas, M. Balczo and all COST ES1006 Members, 2014. COST ACTION ES1006. [Evaluation, improvement and guidance for the use of local-scale emergency prediction and response tools for airborne hazards in built environments](#). *Proceedings of the 6th International Symposium on Computational Wind Engineering - CWE2014*, 192-193.
- F. Barmpas F., S. Trini Castelli, J. Franke, B. Leidl, F. Harms, S. Andronopoulos, M. Balczo, A. Hellsten, 2014. [Model evaluation protocol for cases of emergency response in urban areas](#). *Proceedings of the 6th International Symposium on Computational Wind Engineering - CWE2014*, 416-417.
- M. Milliez, A. Hellsten and all COSTES1006 members, 2014. [Evaluation of dispersion models for improvement and guidance for the use of local-scale emergency response tools; the Michelstadt modelling exercise in COST action ES1006](#). *Proceedings of the 6th International Symposium on Computational Wind Engineering - CWE2014*, 202-203.
- Fuka, V., Brechler, J., 2014. [Large eddy simulation of dispersion of puff releases of hazardous matter in complex geometry](#). *Proceedings of the 6th International Symposium on Computational Wind Engineering - CWE2014*, 200-201.
- Rákai A, Berbekar E, Franke J, 2014. [RANS Passive Scalar Transport Modelling in a Complex Urban Area – Effect of Source Location on the Results](#), *Proceedings of the 6th International Symposium on Computational Wind Engineering - CWE2014*, 116-117.
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- Harms F, Leidl B, Berbekar E, Schatzmann M, Lübcke M: [Reference data for the validation of local-scale emergency response models - an experimental challenge](#), *Proceedings of the 6th International Symposium on Computational Wind Engineering - CWE2014*, 194-195.
- A. Rakai, G. Kristof, J. Franke, 2014. [Sensitivity analysis of microscale obstacle resolving models for an idealized Central European city center, Michel-Stadt](#). *Idojaras, Journal of the Hungarian Meteorological Society*, 118, 53-77.
- A. Rakai, J. Franke, 2014. [Validation of two RANS solvers with flow data of the flat roof Michelstadt case](#). *Journal of Urban Climate*, 10, 758-768
- H. Nakayama, B. Leidl, F. Harms and H. Nagai, 2014. [Evaluation of the local-scale atmospheric dispersion model using Large-Eddy Simulation](#). *Proceedings of the 1st International Conference on Computational Engineering and Science for Safety and Environmental Problems*, 4 pages.
- B. Leidl, S. Trini Castelli, K. Baumann-Stanzer, T.G. Reisin, F. Barmpas, M. Balczo, S. Andronopoulos, P. Armand, K. Jurcakova, M. Milliez and all COST ES1006 Members, 2014. [Evaluation of air pollution models for their use in emergency response tools in built environments: the “Michelstadt” case study in COST ES1006 ACTION](#). *Air Pollution Modeling and its Application XXIII*, D. Steyn and R. Mathur (eds.) Springer Proceedings in Complexity, DOI 10.1007/978-3-319-04379-1\_64, Springer International Publishing Switzerland, 395-398



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## 2013

A. Rakai, J. Franke, 2013. [Numerical error quantification of RANS modelling in an idealized Central European city centre](#). *Proceedings of the 15th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 80-85.

B. Leidl, S. Trini Castelli, K. Baumann-Stanzer, T.G. Reisin, F. Barmpas, J. Moussafir, J. Franke, M. Balczo, P. Armand, S. Andronopoulos and all COST ES1006 Members, 2013. [COST ACTION ES1006. Evaluation, improvement and guidance for the use of local-scale emergency prediction and response tools for airborne hazards in built environments](#). *Proceedings of the 15th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 794-799.

V. Tsiouri, S. Trini Castelli, S. Andronopoulos, 2013. [Qualified datasets for benchmarking local-scale emergency response models for the purpose of disaster management](#). *Proceedings of the 15th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 27-32.

A. Rakai, G. Kristof, 2013. [Microscale Obstacle Resolving Air Quality Model Evaluation with the Michelstadt Case](#). *The Scientific World Journal* Volume 2013, Article ID 781748, 1-10.

F. Harms, E. Berbekar, M. Lübcke, B. Leidl, 2013. [Generation of a reference data-set qualified for the validation of local scale emergency response tools](#). *Proceedings of the PHYSMOD 2013 - International Workshop on Physical Modelling of Flow and Dispersion Phenomena*, paper n. 3.3, 6 pages.

E. Berbekar, M. Lübcke, F. Harms, B. Leidl, 2013. [Validation dataset for local-scale emergency response models](#). *Proceedings of the PHYSMOD 2013 - International Workshop on Physical Modelling of Flow and Dispersion Phenomena*, paper n. 3.4, 6 pages.

M. Lübcke, F. Harms, E. Berbekar, B. Leidl, 2013. [Puff dispersion in a simplified central-European city](#). *Proceedings of the PHYSMOD 2013 - International Workshop on Physical Modelling of Flow and Dispersion Phenomena*, paper n. 3.5, 6 pages.

J. Franke, T. Huỳnh Trung Nam, 2013. Numerical Simulation Of The Flow Field In The Generic City Centre Model Michelstadt. *Tạp chí KH-CN Giao thông vận tải*, Vol. 7+8-9, 191-196 (ISSN 1859-4263)

J. Franke, A. Rakai, 2013. Numerical error quantification of RANS modeling in an idealized central European city centre. *Proceedings of the 14th Asian Congress of Fluid Mechanics - 14ACFM*, Hanoi and Halong, Vietnam, 558 - 566



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## 2012

D. Hertwig, G.C. Efthimiou, J.G. Bartzis, B. Leidl, 2012. [CFD-RANS model validation of turbulent flow in a semi-idealized urban canopy](#). *Journal of Wind Engineering and Industrial Aerodynamics*, 61-72.

N. Koutsourakis, D. Hertwig, G.C. Efthimiou, A.G. Venetsanos, J.G. Bartzis, B. Leidl, 2012. Evaluation of the ADREA-HF LES code for urban air quality assessment, using the CEDVAL-LES wind tunnel database. *Proceedings of the 8th International Conference on Air Quality - Science and Application*, 4 pages.

S. Trini Castelli, G. Tinarelli, B. Leidl, K. Baumann-Stanzer K. and all COST ES1006 Managing Committee Members, 2012. [Evaluation, improvement and guidance for the use of local-scale emergency prediction and response tools for airborne hazards in built environments](#). *Proceedings of the V Convegno Nazionale Agenti Fisici. Il controllo degli agenti fisici: ambiente, salute e qualità della vita*, 8 pages.

G. Tinarelli, S. Trini Castelli, B. Leidl, K. Baumann-Stanzer and all COST ES1006 Managing Committee Members, 2012. [Evaluation, improvement and guidance for the use of local-scale emergency prediction and response tools for airborne hazards in built environments](#). *Proceedings of the VGR 2012 - Valutazione e Gestione del Rischio negli Inseguimenti Civili ed Industria*, VII Edizione.

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J. G. Bartzis, G. C. Efthimiou, D. Hertwig, B. Leidl, R. Fischer, F. Harms, I. Bastigkeit, V. Mytilinou, 2011. [Modelling individual exposure from airborne releases](#). *Proceedings of the 14th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 694-698.

D. Hertwig, G. C. Efthimiou, F. Harms, R. Fischer, I. Bastigkeit, J. G. Bartzis, B. Leidl, 2011. [Aspects of RANS model validation for unsteady urban flows](#). *Proceedings of the 14th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, 91-95.

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G. C. Efthimiou, D. Hertwig, R. Fischer, F. Harms, I. Bastigkeit, N. Koutsourakis, A. Theodoridis, J. G. Bartzis, B. Leidl, 2011. [Wind flow validation for individual exposure studies](#). *Proceedings of the 13th International Conference on Wind Engineering*, 8 pages.