

CURRICULUM VITAE

DR.-ING. DIPL.-PHYS. PETRA KLEIN

Assistant Professor

School of Meteorology, Sarkeys Energy Center, University of Oklahoma, 100 East Boyd Street,
Norman, OK, 73019, USA

Phone: (405) 325-9745, email: pkklein@ou.edu

University Education

- July 1999** Defence of doctor thesis at the faculty of Civil Engineering, University of Karlsruhe, Germany. Title of thesis: *Experimental investigation of fluid mechanical transport processes in street canyons* (mark: very good).
- April 1993** Diploma in Physics, University of Karlsruhe, Germany.
- 1986 – 1993** Physics, University of Karlsruhe, Germany. Diploma thesis: *Wind-tunnel study of vehicle-emission dispersion near road-tunnel portals*, Institute of Hydrology and Water Resources Planning.

Employment History

- since Aug. 2002** Assistant Professor, School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA.
- Jan. 2001 – July 2002** Visiting Assistant Professor, School of Civil Engineering and Environmental Science, University of Oklahoma, Norman, Oklahoma, USA.
- May 1999 - Dec. 2000** Post-Doc Research Associate, Institute for Atmospheric and Climate Science, Swiss Federal Institute of Technology (ETH), Zurich, Switzerland.
- Oct. 1997 – April 1999** Research Associate, Institute of Hydromechanics, University of Karlsruhe, Germany.
- May 1993 - Sept. 1997** Research Associate, Institute of Hydrology and Water Resources Planning, University of Karlsruhe, Germany.

Areas of Research Interests

General area: Atmospheric boundary layer research and tropospheric pollution problems.

Areas of particular interest:

- Flow and turbulence characteristics in urban areas – measurements and modelling.
- Modelling of atmospheric dispersion processes.
- Wind tunnel modelling of geophysical flow phenomena.

Teaching

Spring 2005	Micrometeorology, Senior/Graduate level, lecturer.
Spring 2004	Air Pollution Meteorology and Modelling, Senior/Graduate level, lecturer.
Fall 2003, 2004	Meteorological Measurement Systems, Junior level, lecturer.
Spring 2003	Introduction to Meteorology, Freshman/Sophomore level, lecturer.
2001 - 2002	Air Quality Management and Air Pollution Control Engineering, graduate courses, lecturer.
SS 2000	Applied Air Pollution Modelling, Senior level, teaching assistant.
WS 95/96-SS97	Applied Statistics for Civil Engineers, Senior level, teaching assistant.
1994-1999, 2001-2002	Supervisor of several diploma and master theses.

Professional Service:

Member of Undergraduate Studies Committee, School of Meteorology, University of Oklahoma

Undergraduate Advisor, School of Meteorology, University of Oklahoma

Member of the AMS Board on the Urban Environment

Reviewer for *Journal of Applied Meteorology*, *Atmospheric Environment*, *Atmospheric Research*, *Boundary Layer Meteorology*, *Environmental Fluid Mechanics* and *Environmental Management*

Professional Associations:

Member of the Air and Waste Management Society

Member of the American Meteorological Society

Additional information:

Languages: English: good speaking, reading, and writing,

German: native.

Computer: Extensive knowledge in: Matlab, HTML, Standard PC Software packages (e.g. MS Word, MS Excel, Grapher, Surfer). Basic knowledge in: Fortran, Unix.

Participation in Funded Research Projects:

- 2003-2005** US DOE Project in collaboration with Los Alamos National Laboratories *Integration of Traffic-Produced-Turbulence Parameterizations in the Fast Response Urban Dispersion Model QUIC-PLUME*. Function: Principal Investigator.
- 2003-2005** US DOE/DTRA Project *Study of Traffic-Produced Mean and Turbulent Air Motions in an Urban Street during JOINT URBAN 2003*. Function: Principal Investigator.
- 2002-2004** US DTRA project *Wind-Tunnel Modeling of the DOE/DTRA Urban 2003 Tracer Experiment*. Function: Principal Investigator.
- 2001** OC-ALC/TIET Technology and Engineering Project *Impact of Long-Range Transport of Ozone Precursors from Dallas on Air Quality at TAFB*. Function: Principal Investigator.
- 1999-2000** Project TRAPOS of European Commission Training and Mobility of Researchers Programme *Optimisation of Modelling Methods for Traffic Pollution in Streets*. Function: Young Visiting Researcher (Post-Doc), Chairperson of the Working Group on “Traffic Produced Turbulence”.
- 1997-1999** Project *Strömungsmechanische Aspekte in der Stadtplanung im Hinblick auf eine Reduktion von Kfz – Immissionen*, PEF 2 96 005, Forschungszentrum Karlsruhe. Function: Principal researcher.
- 1995-1996** Project *Windkanalversuche zur Verbesserung der Ermittlung von Kfz - bedingten Konzentrationsverteilungen in Stadtgebieten*, PEF 2 95 001, Forschungszentrum Karlsruhe. Function: Principal researcher.
- 1993-1994** Project *Ermittlung des Strömungs- und Konzentrationsfeldes im Nahfeld typischer Gebäudekonfigurationen (Experimente)*, PEF 2 93 003, Kernforschungszentrum Karlsruhe. Function: Principal researcher.

Additional activities

- 2003-2004** Special Edition of Meteorology and Atmospheric Physics on Air Quality. Function: Co-editor.
- 1994 - 1995** Proceedings *Windprobleme in dichtbesiedelten Gebieten*, WTG - Reports, No. 3, Editor E. Plate, 1995. Function: technical editor.
- Nov. 1993** Organisation of 3rd WTG Dreiländertagung D-A-CH '93 *Windprobleme in dichtbesiedelten Gebieten*, November 11th, 1993, University of Karlsruhe.
- June/July 1993** Participation in organising NATO Advanced Study Institute *Wind Climate in Cities*, Waldbronn, July 5th - 16th, 1993.
- 1993** Expert study: *Windkanaluntersuchungen für den Standort und die Umgebung des Kraftwerks Franken II der Großkraftwerk Franken AG*, TÜV Bayern Sachsen, function: co-worker.

Invited talks

- 01 April 2004** Environmental Protection Agency, Research Triangle Park, North Carolina, USA. Seminar talk: *Mean Flow, Turbulence and Dispersion Characteristics in Urban Areas*
- 14 October 2002** Department of Civil Engineering, Texas Tech University, Lubbock, Texas, USA. Seminar talk: *Urban Air Quality – Overview on Physical and Numerical Modeling Techniques*
- 07 June 2002** Department of Mechanical and Aerospace Engineering, University of California, San Diego, California, USA. Seminar talk: *Mean Flow and Turbulence Characteristics in the Urban Surface Layer*
- 30 May 2002** Department of Land, Air and Water Resources, University of California, Davis, California, USA. Seminar talk: *Mean Flow and Turbulence Characteristics in the Urban Surface Layer*
- 09 May 2002** School of Meteorology, University of Oklahoma, Norman, Oklahoma, USA. Seminar talk: *Meteorological Challenges in Urban Air Quality Management.*
- 24 May 2001** COST Workshop on Urban Boundary Layer Parameterisations, Zurich, Switzerland. Talk: *Overview of near-surface turbulence parameterisations.*
- 15 September 2000** School of Civil Engineering and Environmental Science, University of Oklahoma, Norman, Oklahoma, USA. Seminar talk: *Urban Air Quality Modeling and Assessment.*
- 5 October 1995** 8. ALS-Kolloquium „Ausbreitung von Luftverunreinigungen“, University of Stuttgart, Germany. Talk: *Belastungen durch Luftverunreinigungen an Straßen - Untersuchungen im Windkanal.*

Participation in international scientific meetings

- 23-26 August 2004** 5th AMS Conference on the Urban Environment, Vancouver, BC, Canada. Presentations: *Vertical profiles of mean flow and turbulence characteristics in a downtown street canyon measured during Joint Urban 2003, Modeling of flow and dispersion characteristics in typical urban building configurations with the fast-response model QUIC, and Dispersion modeling of traffic emissions in cities.*
- 11-15 January 2004** 84th AMS Annual Meeting, Seattle, Washington, USA. Presentation: *Wind-tunnel simulation of the JOINT Urban 2003 tracer experiment.*
- 2-5 June 2003** Eleventh International Conference on Wind Engineering, Lubbock, Texas, USA. Presentation: *Evaluation of the fast response model QWIC-URB based on wind-tunnel flow measurements in idealized street canyons.*
- 15-19 July 2002** 15th AMS Symposium on Boundary Layer and Turbulence, Wageningen, Netherlands. Poster presentation: *Evaluation of the Lagrangian footprint model LBDM-B using wind tunnel data sets.*
- 20-24 May 2002** 4th AMS Symposium on the Urban Environment and 12th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association, Norfolk, Virginia, USA. Presentations: *Significance of traffic produced turbulence for urban dispersion modeling and Impact of long-range transport on ozone pollution in the Oklahoma City metro area.*

- 5-8 December 2001** 3rd International Symposium on Environmental Hydraulics, Tempe, Arizona, USA. Presentation *Dispersion of a gaseous plume in the sheared convective boundary layer: Evaluation of a Lagrangian particle model versus wind tunnel simulation data.*
- 14-18 August 2000** 3rd AMS Symposium on the Urban Environment, Davis, California, USA. Presentation: *Spatial variability of mean flow and turbulence fields in street canyons and Wind input data for urban dispersion modeling - activities of working group 1 within COST 715.*
- 7-11 August 2000** 14th AMS Symposium on Boundary Layer and Turbulence, Aspen, Colorado, USA. Presentation: *Experimental study on mean flow and turbulence characteristics in an urban roughness sublayer.*
- 11-14 Oct. 1999** 6th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes. Rouen, France. Presentation: *Organised and turbulent air motions in a wind tunnel model of a street canyon with and without moving vehicles.*
- 13-15 Sept. 1999** EC391 EUROMECH Colloquium Wind tunnel modelling of dispersion in environmental flows, Institute of Thermomechanics, Prague, Czech Republic. Presentations: *Wind tunnel study of concentration and flow fields near street canyon intersections,* and *Diffusion from a line source deployed in a homogeneous roughness layer: Interpretation of wind tunnel measurements by means of simple mathematical models.*
- 23-25 August 1999** Workshop of the Program SATURN (Studying Atmospheric Pollution in Urban Areas), University of Aveiro, Portugal. Poster presentation: *Wind tunnel study of flow fields in street canyons with moving vehicles.*
- 3-5 March 1999** 2nd International Conference on Urban Air Quality: Measurement, Modelling and Management, Technical University of Madrid, Madrid, Spain. Presentation: *Similarity concept for dispersion of car exhaust gases in street canyons tested against wind-tunnel and numerical model data.*
- 30 June-3 July 1998** International Workshop on Flow Diagnosis Techniques, State Marine Technology University, St. Petersburg, Russia. Presentation: *Application of LDA technique to flow and turbulent diffusion diagnosis in a wind-tunnel model of urban street canyon with moving vehicles.*
- 18-21 May 1998** 5th Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, Rhodes, Greece. Presentation: *Modelling of vehicle induced turbulence in air pollution studies for streets.*
- 2-6 June 1997** 22nd NATO CCMS International Technical Meeting on Air Pollution Modelling and its Application, Clermont Ferrand, France.
- 17-27 March 1997** NATO Advanced Study Institute Buoyant Convection in Geophysical Flows, Pforzheim, Germany.
- 4-8 August 1996** 2nd International Symposium on Computational Wind Engineering, (CWE 96), Fort Collins, Colorado, USA. Presentation: *Concentration and flow distributions in the vicinity of U-shaped buildings: Wind tunnel and computational data.*
- 10-14 June 1996** International Conference on Urban Climatology, ICUC'96, Essen, Germany. Presentation: *Wind-tunnel studies of concentration fields in street canyons and crossings.*

- 5-9 May 1996** 4th Workshop on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes. Oostende, Belgium. Presentation: *Wind-tunnel case studies of atmospheric dispersion in the urban environment.*
- 27-29 Sept. 1994** 2nd International Conference "Air Pollution 94", Barcelona, Spain. Presentation: *Concentration estimation around point sources located in the vicinity of U-shape buildings.*
- 5-16 July 1993** NATO Advanced Study Institute "Wind Climate in Cities", Waldbronn, Germany.

List of publications

Refereed articles in journals

- N. Kljun, P. Kastner-Klein, E. Fedorovich, M.R. Rotach, 2004.** Evaluation of Lagrangian footprint model using data from wind tunnel convective boundary layer. *Agricultural and Forest Meteorology*, **127**, 189-201.
- P. Kastner-Klein, R. Berkowicz, R. Britter, 2004.** The influence of street architecture on flow and dispersion in street canyons. Accepted in *Meteorology and Atmospheric Physics*, **87**, 121-131.
- P. Kastner-Klein, M. W. Rotach, 2004.** Mean flow and turbulence characteristics in an urban roughness sublayer. *Boundary Layer Meteorology*, **111**, 55-84.
- S. Di Sabatino, P. Kastner-Klein, R. Berkowicz, R. Britter, E. Fedorovich, 2003.** The modeling of turbulence from traffic in urban dispersion models – Part I: Theoretical considerations. *Environmental Fluid Mechanics*, **3**, 129-143.
- P. Kastner-Klein, M. Ketzel, R. Berkowicz, E. Fedorovich, R. Britter, 2003.** The modelling of turbulence from traffic in urban dispersion models – Part II: Evaluation against laboratory and full-scale concentration measurements in street canyons. *Environmental Fluid Mechanics*, **3**, 145-172.
- P. Kastner-Klein, E. Fedorovich, 2002.** Diffusion from a line source deployed in a homogeneous roughness layer: interpretation of wind tunnel measurements by means of simple mathematical models. *Atmospheric Environment*, **36**, 3709-3718.
- P. Kastner-Klein, E. Fedorovich, M. W. Rotach, 2001.** A wind tunnel study of organised and turbulent air motions in urban street canyons. *Journal of Wind Engineering and Industrial Aerodynamics*, **89**, 849-861.
- P. Kastner-Klein, R. Berkowicz, E. J. Plate, 2000.** Modelling of vehicle induced turbulence in air pollution studies for streets. *International Journal of Environment and Pollution*, **14**, 496-507.
- P. Kastner-Klein, E. Fedorovich, J.-F. Sini, P.G. Mestayer, 2000.** Experimental and numerical verification of similarity concept for diffusion of car exhaust gases in urban street canyons. *Environmental Monitoring and Assessment*, **65**, 353-361.
- P. Kastner-Klein, E. J. Plate, 1999.** Wind-tunnel study of concentration fields in street canyons, *Atmospheric Environment*, **33**, 3973-3979.
- B. Leitl, P. Kastner-Klein, M. Rau, R.N. Meroney, 1997.** Concentration and flow distributions in the vicinity of U-shaped buildings: Wind tunnel and computational data, *Journal of Wind Engineering and Industrial Aerodynamics*, **67-68**, 745-755.
- P. Kastner-Klein, E. Fedorovich, E. J. Plate, 1997.** Gaseous pollutant dispersion around urban-canopy elements: wind tunnel case studies. *International Journal of Environment and Pollution*, **8**, 727-737.
- W. Bächlin, P. Klein, 1994.** Diffusion problems near tunnel portals in built-up areas. *The Science of the Total Environment*, **146/147**, 377-385.

Articles in proceedings

- P. Kastner-Klein, and J.V. Clark, 2004:** Vertical profiles of mean flow and turbulence characteristics in a downtown street canyon measured during Joint Urban 2003. *Proceedings of the 5th AMS Conference on the Urban Environment*, August 23-26, Vancouver, BC, Canada.
- P. Kastner-Klein, and J.V. Clark, 2004:** Modeling of flow and dispersion characteristics in typical urban building configurations with the fast-response model QUIC. *Proceedings of the 5th AMS Conference on the Urban Environment*, August 23-26, Vancouver, BC, Canada.
- P. Kastner-Klein, B. Leitl, F. Pascheke, M. Schatzmann, 2004:** Wind-tunnel simulation of the JOINT Urban 2003 tracer experiment. *Proceedings of the AMS Symposium on Planning, Nowcasting, and Forecasting in the Urban Zone*, January 11-15, Seattle, Washington, USA.
- M. Brown, D. Boswell, G. Streit, M. Nelson, T. McPherson, T. Hilton, E.R. Pardyjak, S. Pol, P. Ramamurthy, B. Hansen, P. Kastner-Klein, J. Clark, A. Moore, D. Walker, N. Felton, D. Strickland, D. Brook, M. Princevac, D. Zaijic, R. Wayson, J. Mac Donald, F. Fleming, D. Storwald, 2004:** JOINT Urban 2003 street canyon experiment. *Proceedings of the AMS Symposium on Planning, Nowcasting, and Forecasting in the Urban Zone*, January 11-15, Seattle, Washington, USA.
- B. Leitl, F. Pascheke, M. Schatzmann, P. Kastner-Klein, 2003:** Wind-tunnel experiments within the scope of the Oklahoma City tracer experiment. *Proceedings of PHYSMOD2003: International Workshop on Physical Modeling of Flow and Dispersion Phenomena*, September 3-5, Prato, Italy.
- N. Kljun, P. Kastner-Klein, M. W. Rotach, E. Fedorovich, 2002.** Evaluation of the Lagrangian footprint model LBDM-B using wind tunnel data sets, *Proceedings of the 15th AMS Symposium on Boundary Layer and Turbulence*, July 15-19, Wageningen, The Netherlands.
- P. Kastner-Klein, M. Ketzel, S. Di Sabatino, R. Berkowicz, R. Britter, E. Fedorovich, 2002.** Significance of traffic produced turbulence for urban dispersion modeling. *Proceedings of the 4th AMS Symposium on the Urban Environment*, May 20-24, Norfolk, Virginia, USA.
- P. Kastner-Klein, D. Williams, F. Hall, 2002.** Impact of long-range transport on ozone pollution in the Oklahoma City metro area. *Proceedings of the 12th Joint Conference on the Applications of Air Pollution Meteorology with the Air and Waste Management Association*, May 20-24, Norfolk, Virginia, USA.
- P. Kastner-Klein, E. Fedorovich, N. Kljun, M. W. Rotach, 2001.** Dispersion of a Gaseous Plume in the Sheared Convective Boundary Layer: Evaluation of a Lagrangian Particle Model Versus Wind Tunnel Simulation Data. *Proceedings of the 3rd International Symposium on Environmental Hydraulics*, Tempe, Arizona, USA, 5-8 December 2001.
- M. W. Rotach, P. Kastner-Klein, 2001.** Turbulent Exchange of Momentum in the Urban Roughness Sublayer. *Proceedings of the 3rd International Symposium on Environmental Hydraulics*, Tempe, Arizona, USA, 5-8 December 2001.

- M. Ketzler, R. Berkowicz, T. Flassak, A. Lohmeyer, P. Kastner-Klein, 2001.** Adaptation of results from CFD-models and wind-tunnels for practical traffic pollution modelling. *Proceedings of the 7th Workshop on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Belgirate, Italy, 28-31 May 2001 (<http://rtmod.jrc.it/~thunis/harmo7/>).
- P. Kastner-Klein, 2001.** Near-surface turbulence parameterizations (overview). *Proceedings of the COST Workshop on Urban Boundary Layer Parameterisations*, Zurich, Switzerland, 24th May 2001.
- N. Kljun, P. Kastner-Klein, M. W. Rotach, E. Fedorovich, 2001.** Evaluation of 3D Lagrangian footprint models with wind tunnel data sets for the convective boundary layer, *EGS General Assembly*, Nice, France, March 26-30 2001.
- P. Kastner-Klein, M. W. Rotach, E. 2001.** Parameterization of wind and turbulent shear stress profiles in the urban roughness sublayer. *Proceedings of the Third International Conference on Urban Air Quality*, Loutraki, Greece, 19-23 March 2001.
- P. Kastner-Klein, R. Berkowicz, E. Fedorovich, E. 2001.** Evaluation of scaling concepts for traffic-produced turbulence based on laboratory and full-scale concentration measurements in street canyons. *Proceedings of the Third International Conference on Urban Air Quality*, Loutraki, Greece, 19-23 March 2001.
- P. Kastner-Klein, M. W. Rotach, M.J. Brown, E. Fedorovich, R.E. Lawson, 2000.** Spatial variability of mean flow and turbulence fields in street canyons, *Proceedings of the 3rd AMS Symposium on the Urban Environment*, August 14-18, Davis, California, USA.
- P. Kastner-Klein, M. W. Rotach, E. Fedorovich, 2000.** Experimental study on mean flow and turbulence characteristics in an urban roughness sublayer, *Proceedings of the 14th AMS Symposium on Boundary Layer and Turbulence*, August 7-11, Aspen, Colorado, USA.
- M. W. Rotach, E. Batchvarova, R. Berkowicz, J. Brechler, Z. Janour, P. Kastner-Klein, D. Middleton, V. Prior, C. Sacré, C. Soriano, 2000.** Wind input data for urban dispersion modeling, *Proceedings of the COST 715 WG4 Workshop*, June 15-16, Prague, Czech Republic.
- P. Kastner-Klein, E. Fedorovich, M. W. Rotach, 1999.** Organised and turbulent air motions in a wind tunnel model of a street canyon with and without moving vehicles, *Proceedings of 6th International Conference on Harmonisation within Atmospheric Dispersion Modelling*, October 11-14, Rouen, France.
- P. Kastner-Klein, R. Berkowicz, A. Rastetter, E. J. Plate, 1998.** Modelling of vehicle induced turbulence in air pollution studies for streets. *Proceedings of the 5th Workshop on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*. Rhodes, Greece, 18-21 May 1998.
- P. Kastner-Klein, E. J. Plate, 1998.** Strömungsmechanische Aspekte in der Stadtplanung im Hinblick auf eine Reduktion von Kfz-Immissionen. FZKA-BWPLUS 3 (Mai 1998): F. Horsch et al. (Hrsg.): Diskussionskreise "Maßnahmen zur Luftreinhaltung" (PEF) beim Statusseminar 1998.

- E. J. Plate, P. Kastner-Klein, 1998.** Wind tunnel modelling of traffic induced pollution in cities. Proceedings of the 2nd German-Japanese meeting “Klimaanalyse für die Stadtplanung” 25.-27. September 1997, Research Center for Urban safety and Security Kobe University, Japan. Special Report No. 1, T. Okimura, M. Moriyama, H. Zimmermann (Eds.), pp. 206-221.
- P. Kastner-Klein, E. J. Plate, 1997.** Windkanalversuche zur Verbesserung der Ermittlung von Kfz - bedingten Konzentrationsverteilungen in Stadtgebieten. 13. *Statuskolloquium des PEF*, 11.-12. März 1997, Forschungszentrum Karlsruhe, Hrsg. F. Horsch et al., FZKA - PEF 153, pp. 235-246, April 1997.
- P. Kastner-Klein, E. J. Plate, 1996.** Windkanalversuche zur Verbesserung der Ermittlung von Kfz - bedingten Konzentrationsverteilungen in Stadtgebieten. 12. *Statuskolloquium des PEF*, 12.-13. März 1996, Forschungszentrum Karlsruhe, Hrsg. F. Horsch et al., FZKA - PEF 142, pp. 279-290, April 1996.
- P. Kastner-Klein, E. Fedorovich, E. J. Plate, 1996.** Wind-tunnel case studies of atmospheric dispersion in the urban environment, *Proceedings of the 4th Workshop on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes*, Oostende, Belgium, 6-9 May 1996.
- E. J. Plate, P. Kastner-Klein, 1995.** Simulation der Ausbreitung von KFZ-Abgasen - Fachliche Impulse durch Windkanalmessungen, *Experten-Workshop „Verkehr und Immissionen“*, Forschungszentrum Karlsruhe, 12.7.1995.
- P. Kastner-Klein, E. J. Plate, 1995.** Belastungen durch Luftverunreinigungen an Straßen -- Untersuchungen im Windkanal, 8. *ALS-Kolloquium „Ausbreitung von Luftverunreinigungen“*, Universität Stuttgart, 5. Oktober 1995.
- P. Klein, M. Rau, R. Röckle, E. J. Plate, 1994.** Concentration estimation around point sources located in the vicinity of U-shape buildings. *Air Pollution II, Vol. 2: Pollution Control and Monitoring*, Editors: J.M. Baldasano, C.A. Brebbia, H. Power, P. Zanetti, Computational Mechanics Publications 1994.
- P. Klein, M. Rau, Z. Wang, E. J. Plate, 1994.** Ermittlung des Strömungs- und Konzentrationsfeldes im Nahfeld typischer Gebäudekonfigurationen (Experimente). 10. *Statuskolloquium des PEF*, 15.-17. März 1994, Kernforschungszentrum Karlsruhe, Hrsg. F. Horsch et al., FZKA - PEF 118, April 1994.

Reports and Thesis:

- P. Kastner-Klein, S. Di Sabatino, M. Ketzler, A. Kovar-Panskus, P. Louka, S. Trini Castelli, R. Berkowicz, R. Britter, E. Fedorovich, J.-F. Sini, 2001.** The Modelling of Traffic Produced Turbulence. *Included in the final report of the TMR research network TRAPOS “Optimisation of Modelling Methods for Traffic Pollution in Streets“*, submitted to the European Commission, July 2001.

- E. Savory, M. W. Rotach, C. Chauvet, E. Guilloteau, P. Kastner-Klein, A. Kovar-Panskus, P. Louka, P. Sahm, S. Trini Castelli, 2001.** Street architecture and air quality. *Included in the final report of the TMR research network TRAPOS "Optimisation of Modelling Methods for Traffic Pollution in Streets"*, submitted to the European Commission, July 2001.
- C. Chauvet, P. Kastner-Klein, A. Kovar-Panskus, E. Savory, M. Schatzmann, 2001.** The Use of Wind Tunnels in Modelling Air Quality in Street Canyons. *Included in the final report of the TMR research network TRAPOS "Optimisation of Modelling Methods for Traffic Pollution in Streets"*, submitted to the European Commission, July 2001.
- P. Kastner-Klein, B. Ruck, E. J. Plate, 2000.** Strömungsmechanische Aspekte in der Stadtplanung im Hinblick auf eine Reduktion von Kfz-Immissionen. *Final report of the research project PEF 2 96 005, FZKA-BWPLUS 49* (<http://bwplus.fzk.de>), PEF; Forschungszentrum Karlsruhe (in German).
- P. Kastner-Klein, 1999.** Experimentelle Untersuchung der strömungsmechanischen Transportvorgänge in Straßenschluchten. *Doctoral Thesis*, University of Karlsruhe, Germany, publication series of the 'Institut für Hydromechanik der Universität Karlsruhe', ISSN 1439 - 4111, issue 2/1999 (in German).
- P. Kastner-Klein, E. J. Plate, 1999.** Windkanalversuche zur Verbesserung der Ermittlung von Kfz-bedingten Konzentrationsverteilungen in Stadtgebieten. *Final report of the research project PEF 2 95 001, FZKA-BWPLUS 9* (<http://bwplus.fzk.de>), PEF; Forschungszentrum Karlsruhe (in German).
- P. Klein, M. Rau, Z. Wang, E. J. Plate, 1994.** Ermittlung des Strömungs- und Konzentrationsfeldes im Nahfeld typischer Gebäudekonfigurationen (Experimente). *Final report of the research project PEF 2 92 003, KfK-PEF 124*, Kernforschungszentrum Karlsruhe (in German).