

PUBLICATIONS LIST - FZK/IMK-IFU

- **Aircraft Emissions**
- **Airport Emissions**

Reviewed Journal Publications

- Heland, J., Schäfer, K.: Analysis of aircraft exhausts using FTIR-emission-spectroscopy. *Applied Optics* 36, 21 (1997), 4922-4931. (ISI)
- Heland, J., Schäfer, K.: Determination of major combustion products in aircraft exhausts by FTIR emission spectroscopy. *Atmospheric Environment* 32, 18 (1998), 3067-3072. (ISI)
- Schäfer, K., Heland, J., Lister, D.H., Wilson, C.W., Howes, R.J., Falk, R.S., Lindermeir, E., Birk, M., Wagner, G., Haschberger, P., Bernard, M., Legras, O., Wiesen, P., Kurtenbach, R., Brockmann, K.J., Kriesche, V., Hilton, M., Bishop, G., Clarke, R., Workman, J., Caola, M., Geatches, R., Burrows, R., Black, J.D., Hervé, P., Vally, J.: Non-intrusive optical measurements of aircraft engine exhaust emissions and comparison with standard intrusive techniques, *Applied Optics* 39, 3 (2000), 441-455. (ISI)
- Schäfer, K.: Non-intrusive measurements of aircraft and rocket exhaust emissions. *Air & Space Europe* 3, 1/2 (2001), 104-108.
- Schäfer, K., Jahn, C., Haus, R., Heland, J.: Messung der Emissionsindizes in Flugzeugabgasen auf Flughäfen und Fackelabgasen mittels FTIR-Emissionsspektrometrie. *Gefahrstoffe - Reinhaltung der Luft* 62, 5 (2002), 209-213.
- Schäfer, K., Jahn, C., Sturm, P., Lechner, B., Bacher, M.: Aircraft emission measurements by remote sensing methodologies at airports. *Atmospheric Environment* 37, 37 (2003), 5261-5271. (ISI)
- Schäfer, K., Brockmann, K., Heland, J., Wiesen, P., Jahn, C., Legras, O.: Multi-Pass Open-Path FTIR Measurements for Non-Intrusive Monitoring of Gas Turbine Exhausts Composition. *Applied Optics*, 44, 11 (2005), 2189-2201. (ISI)
- Schürmann, G., Schäfer, K., Jahn, C., Hoffmann, H., Bauerfeind, M., Fleuti, E., Rappenglück, B.: The impact of NO_x, CO and VOC emissions on the air quality of the airport Zurich. *Atmospheric Environment* 41 (2007), 103-118, doi:10.1016/j.atmosenv.2006.07.030.

Other Publications

- Schäfer, K., Schürmann, G., Jahn, C., Hoffmann, H., Emeis, S.: Aircraft emissions and airport air quality monitoring. *International Colloquium „Safeguarding Airport Air Quality: Angles for Approach“*, April 12, 2007, Manchester, UK; Tagungs-CD (invited).

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- Schäfer, K., Jahn, C., Utzig, S., Flores-Jardines, E., Hoffmann, H., Schürmann, G., Emeis, S., Harig, R., Rusch, P., Sturm, P., Lechner, B., Bacher, M., Groma, V., Török, S.: Airport air pollution monitoring. Achievements in the past, limits of the present, challenges for the future. ECATS Spring School & Research Colloquium, Manchester Metropolitan University, Manchester, 12.-14.03.2007; Tagungs-CD.
- Schäfer, K., Schürmann, G., Jahn, C., Hoffmann, H., Emeis, S.: Air quality at the airport Budapest and inverse dispersion modelling to determine the strength of different emission sources. In: Proceedings of the 6th International Conference on Urban Air Quality, Ranjeet S. Sokhi, Marina Neophytou (eds.), Limassol, Cyprus, 27 – 29 March 2007, Tagungs-CD, ISBN 978-1-905313-46-4; 6th International Conference on Urban Air Quality, Limassol, Cyprus, 27. – 29.03.2007.
- Schäfer, K., Flores-Jardines, E., Harig, R., Jahn, C., Grutter, M.: Monitoring of Aircraft Exhaust Emissions by Scanning Imaging FTIR. In: Proceedings of the 8th International Conference on Emissions Monitoring, September 5 – 6, 2007, EMPA Academie Dübendorf, Switzerland (2007), 17-22; 8th International Conference on Emissions Monitoring, EMPA Academie Dübendorf, Switzerland, 05. – 06.09.2007.
- Schürmann, G., Schäfer, K., Emeis, S., Torok, S., Groma, V.: Application of Bayesian Inverse Methods to Determine Emission Strengths on the Airport Budapest. In: Proceedings of the 8th International Conference on Emissions Monitoring, September 5 – 6, 2007, EMPA Academie Dübendorf, Switzerland (2007), 252-257; 8th International Conference on Emissions Monitoring, EMPA Academie Dübendorf, Switzerland, 05. – 06.09.2007.
- Schürmann, G., Schäfer, K., Emeis, S.: Influence of Assumptions about Source Geometry on the Results of Inverse Dispersion Modelling. In: Proceedings of the 8th International Conference on Emissions Monitoring, September 5 – 6, 2007, EMPA Academie Dübendorf, Switzerland (2007), 258-263; 8th International Conference on Emissions Monitoring, EMPA Academie Dübendorf, Switzerland, 05. – 06.09.2007.
- Schäfer, K., Schürmann, G., Emeis, S., Jahn, C., Hoffmann, H.: Bestimmung der Emissionsquellen auf Flughäfen mittels inverser Ausbreitungsmodellierung zur Untersuchung der Luftqualität. In: Langfassungen der Beiträge der Deutsch-Österreichisch-Schweizerische Meteorologen-Tagung 2007, 10.-14.09.2007, Hamburg, Meteorologisches Institut, Universität Hamburg, 2007, Internet: http://meetings.copernicus.org/dach2007/download/DACH2007_A_00074.pdf; Deutsch-Österreichisch-Schweizerische Meteorologen-Tagung 2007, 10.-14.09.2007, Hamburg.
- Schäfer, K., Schürmann, G., Jahn, C., Matuse, C., Hoffmann, H., Takacs, E., Alföldy, B., Groma, V., Kugler, S.: Budapest airport air quality long-term studies by remote sensing with DOAS and FTIR with focus upon runway emissions. In: Remote Sensing of Clouds and the

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- Atmosphere XII, Adolfo T. Comeron, Klaus Schäfer, James R. Slusser, Richard H. Picard (eds.), Proceedings of SPIE, Bellingham, WA, USA, Vol. 6745 (2007), 67451P-1 – 67451P-9), ISSN 0277-786X, ISBN 978-0-8194-6903-8; Remote Sensing, SPIE Europe Remote Sensing, 17.–21. September 2007, Florence, Italy.
- Flores-Jardines, E., Schäfer, K., Black, J., Harig, R., Jahn, C.: Remote sensing of aircraft exhaust temperature and composition by passive Fourier Transform Infrared (FTIR). In: Remote Sensing of Clouds and the Atmosphere XII, Adolfo T. Comeron, Klaus Schäfer, James R. Slusser, Richard H. Picard (eds.), Proceedings of SPIE, Bellingham, WA, USA, Vol. 6745 (2007), 67451Q-1 – 67451Q-12), ISSN 0277-786X, ISBN 978-0-8194-6903-8; Remote Sensing, SPIE Europe Remote Sensing, 17.–21. September 2007, Florence, Italy.
- Schäfer, K., Emeis, S., Jahn, C., Hoffmann, M., Heyder, C., Helmis, C., Scouros, G., Flocas, H., Tombrou, M., Asimakopoulos, D., Halios, C., Kurtenbach, R., Niedojadlo, A., Wiesen, P., Anamaterou, E., O'Connor, M.: Airport air quality studies in Athens. First results of measurement campaign. In: VKM-THD Mitteilungen, S. Hausberger, S. Minarik (eds.), Institute for Internal Combustion Engines and Thermodynamics, Graz University of Technology, Graz, Austria, Volume 91, 237-244 (2008); (ISBN 987-3-85125-016-9); 16th International Conference "Transport and Air Pollution", Graz, Austria, 16.–17.06.2008, Poster.
- Schäfer, K., Schürmann, G., Emeis, S., Jahn, C., Hoffmann, M.: Bestimmung der Flughafenemissionen von Luftschadstoffen mittels inverser Ausbreitungsmodellierung. In: VDI-Berichte „Neue Entwicklungen bei der Messung und Beurteilung der Luftqualität“, VDI-Verlag GmbH, Düsseldorf 2040, 273-276 (2008); (ISBN 978-3-18-092040-5); Tagung „Neue Entwicklungen bei der Messung und Beurteilung der Luftqualität“, 24.-25.06.2008 in Nürnberg, Poster.
- Schäfer, K., Flores, E., Harig, R., Jahn, C.: Remote sensing of aircraft exhausts composition at airports – basics of a new VDI guideline for passive FTIR. In: VDI-Berichte „Optische Analysenmesstechniken in Industrie und Umwelt“, VDI-Verlag GmbH, Düsseldorf 2047, 121-129 (2008); ISBN 978-3-18-092047-4; 6. Tagung „Optische Analysenmesstechniken in Industrie und Umwelt“, 25.-26.09.2008 in Dortmund.
- Schäfer, K., Emeis, S., Jahn, C., Hoffmann, M., Heyder, C., Haas, F., Helmis, C., Scouros, G., Kurtenbach, R., Niedojadlo, A., Anamaterou, E., O'Connor, M.: Athens International Airport air quality study. Overview and gas phase measurements. ECATS Workshop Airport Air Quality, Bucharest International Airport, Sinaia, Romania, 26.-27.11.2008; <http://www.cate.mmu.ac.uk/ecatsaaqschool/index2.asp>.

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- Helmis, C., Sgouros, G., Flocas, H., Schäfer, K., Emeis, S., Jahn, C., Hoffmann, M., Heyder, C., Haas, F., Kurtenbach, R., Niedojadlo, A., O'Connor, M., Anamaterou, E.: Influence of the Meteorology on Airport Air Quality. ECATS Workshop Airport Air Quality, Bucharest International Airport, Sinaia, Romania, 26.-27.11.2008; <http://www.cate.mmu.ac.uk/ecatsaaqschool/index2.asp>.
- Kugler, S., Takacs, E., Alföldy, B., Groma, V., Schäfer, K., Schürmann, G., Jahn, C., Matuse, C., Hoffmann, H.: Budapest Airport Air Quality Study. ECATS Workshop Airport Air Quality, Bucharest International Airport, Sinaia, Romania, 26.-27.11.2008; <http://www.cate.mmu.ac.uk/ecatsaaqschool/index2.asp>.
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