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### **Arbeitsbereich/ Field of work**

- Leiter Fachabteilung Umweltmeteorologie/ Head of Department Environmental Meteorology

### **CV / Lebenslauf**

Jan 2009 - present	ZAMG, Head of Department Environmental Meteorology
1993 - 2008	ZAMG, Deputy Head of Department Environmental Meteorology
1980 - 1993	ZAMG, Department of Environmental Meteorology
1974 - 1980	Vienna University, student at Institute for Meteorology and Geophysics Dissertation: "Beschreibung und erste Ergebnisse eines Feinmaschen-Grenzschichtmodells für Vertikalbewegungen in den Alpen (mit parameterisierter kinematischer Randbedingung)" Final Certification : "Dr. phil"

### **Professional experience (selection)**

Austrian Ministry of Environmental Protection (Guideline on Extensive Animal Farming)

Austrian Ministry for Economic Affairs (Technical Notes on Dispersion in the Near Field of Small Sources)

Regional Government of Styria (Odour dispersion modelling)

Austrian Science Fund FWF (Projects: P 13492 ROM – Rhine valley ozone study within MAP; P20620-B16 – Meteorological impacts on pollen emission and spread)

EC-COST: National Delegate to COST – Action 76 (VHF/UHF wind profilers); National Delegate, Working Group leader and Editor in COST – Action 715 (Meteorology Applied to Urban Air Pollution Problems), temporal National Delegate to COST – Action 732 (Microscale Meteorological Models); National Delegate to COST-Action ES702 (EG-CLIMET - European ground-based observations of essential variables)

## Publications / Publikationen

### Peer reviewed publications

- **Piringer**, M. (1994): Selected results of a Sodar intercomparison experiment. Meteorol. Zeitschrift, N. F. 3, 132 - 137.
- **Piringer**, M., K. Baumann, H. Rötzer, J. Riesing, K. Nodop (1997): Results on Perfluorocarbon Background Concentrations in Austria. Atmos. Env. 31, No. 4, 515 - 527.
- **Piringer**, M., E. Ober, H. Puxbaum, H. Kromp-Kolb (1997): Occurrence of nitric acid and related compounds in the northern Vienna Basin during summertime anticyclonic conditions. Atmos. Env. 31, No. 7, 1049 - 1057.
- Stohl, A., K. Baumann, G. Wotawa, M. Langer, B. Neininger, M. **Piringer**, H. Formeyer (1997): Diagnostic downscaling of large-scale wind fields to compute local scale trajectories. J. Appl. Meteor. 36, Vol. 7, 931 - 942.
- **Piringer**, M., K. Baumann, M. Langer (1998): Summertime Mixing Heights at Vienna, Austria, Estimated from Vertical Soundings and by a Numerical Model. Boundary-Layer Meteor. 89, 25 - 45.
- **Piringer**, M., G. Schaubberger (1999): Comparison of a Gaussian Diffusion Model with Guidelines for Calculating the Separation Distance between Livestock Farming and Residential Areas to Avoid Odour Annoyance. Atmos. Env. 33, 2219 - 2228.
- Schaubberger, G., M. **Piringer**, E. Petz, 1999: Diurnal and annual variation of odour emission from animal houses: a model calculation for fattening pigs. J. Agricult. Eng. Res. 74, No. 3, 251 - 259.
- **Piringer**, M., K. Baumann, 1999: Modifications of a valley wind system by an urban area - experimental results. Meteorol. Atmos. Phys. 71, 117 - 125.
- Schaubberger, G., M. **Piringer**, E. Petz, 2000: Steady-state balance model to calculate the indoor climate of livestock buildings, demonstrated for finishing pigs. Int. J. Biometeorol. 43, 154 - 162.
- Schaubberger, G., M. **Piringer**, E. Petz, 2000: Diurnal and annual variation of the sensation distance of odour emitted by livestock buildings calculated by the Austrian odour dispersion model (AODM). Atmos. Environ. 34, 4839 - 4851.
- Öttl, D., R. A. Almbauer, P. J. Sturm, M. **Piringer**, K. Baumann, 2000: Analysing the nocturnal wind field in the city of Graz. Atmos. Env. 35, 379 - 387.
- Almbauer, R. A., M. **Piringer**, K. Baumann, D. Öttl, P. J. Sturm, 2000: Analysis of the daily variations of wintertime air pollution concentrations in the city of Graz, Austria. Environmental Monitoring and Assessment 65, 79 - 87.
- **Piringer**, M., K. Baumann, U. Pechinger, S. Vogt, 2001: Meteorological and ozone sounding experience during a strong foehn event - a MAP case study. Meteorol. Z 10, 445 - 455.
- Schaubberger, G., M. **Piringer**, E. Petz, 2001: Separation distance to avoid odour nuisance due to livestock calculated by the Austrian odour dispersion model (AODM). Agriculture, Ecosystems and Environment 87, 13 - 28.
- K. Baumann, H. Maurer, G. Rau, M. **Piringer**, U. Pechinger, A. Prévôt, M. Furger, B. Neininger, U. Pellegrini, 2001: The influence of south Foehn on the ozone distribution in the Alpine Rhine valley - results from the MAP field phase. Atmos. Env. 35/36, 6379-6390.
- Schaubberger, G. and M. **Piringer**, 2001: Predicting odour impact using the Austrian odour dispersion model (AODM). Water Science and Technology 44, No. 9, 197 - 204.

- Schaubberger, G., M. **Piringer**, E. Petz, 2002: Calculating direction - dependant separation distance by a dispersion model to avoid livestock odour annoyance. *Biosystems Engineering*, **82**, 25 - 37.
- **Piringer**, M., C. S. B. Grimmond, S. M. Joffre, P. Mestayer, D. R. Middleton, M. W. Rotach, A. Baklanov, K. De Ridder, J. Ferreira, E. Guilloteau, A. Karppinen, A. Martilli, V. Masson, M. Tombrou, 2002: Investigating the Surface Energy Balance in Urban Areas – Recent Advances and Future Needs. *Water, Air and Soil Poll.: Focus* **2**, 1 – 16.
- Baumann-Stanzer, K., M. **Piringer**, 2004: Foehn signals detected by sodar wind and turbulence measurements in the Rhine Valley, Austria, during the MAP field phase. *Meteorol. Atmos. Phys.* **85**, 125 – 139.
- Schaubberger, G., M. **Piringer**, E. Petz, 2006: Odour episodes in the vicinity of livestock buildings: A qualitative comparison of odour complaint statistics with model calculations. *Agriculture, Ecosystems and Environment* **114**, 185 - 194.
- Drobinski, P., R. Steinacker, H. Richner, K. Baumann-Stanzer, G. Beffrey, B. Benech, H. Berger, B. Chimani, A. Dabas, M. Dorninger, B. Dürr, C. Flamant, M. Frioud, M. Furger, I. Gröhn, S. Gubser, T. Gutermann, C. Häberli, E. Hällner-Schornhorst, G. Jaubert, M. Lothon, V. Mitev, U. Pechinger, M. **Piringer**, M. Ratheiser, D. Ruffieux, G. Seiz, M. Spatzierer, S. Tschannett, S. Vogt, R. Werner, G. Zängl, 2007: Föhn in the Rhine Valley during MAP; A review of its multiscale dynamics in complex valley geometry. *Q. J. R. Meteorol. Soc.* **133**, Part B, 897 - 916.
- **Piringer**, M., E. Petz, I. Groehn, G. Schaubberger, 2007: A sensitivity study of separation distances calculated with the Austrian Odour Dispersion Model (AODM). *Atmos. Env.* **41**, 1725 – 1735.
- **Piringer**, M., S. Joffre, A. Baklanov, A. Christen, M. Deserti, K. de Ridder, S. Emeis, P. Mestayer, M. Tombrou, D. Middleton, K. Baumann – Stanzer, A. Dandou, A. Karppinen, J. Burzynski, 2007: The surface energy balance and the mixing height in urban areas – activities and recommendations of COST-Action 715. *Boundary-Layer Meteorol.* **124**, 3 - 24.
- Emeis, S., K. Baumann-Stanzer, M. **Piringer**, M. Kallistratova, R. Kouznetsov, V. Yushkov, 2007: Wind and turbulence in the urban boundary layer – analysis from acoustic remote sensing data and fit to analytical relations. *Meteorol. Z.* **16** (4), 393 – 406.
- **Piringer**, M., K. Baumann-Stanzer, 2009: Selected results of a model validation exercise. *Adv. Sci. Res.* **3**, 13 - 16.

### Editorial work

- **Piringer**, M., Editor, 2002: Surface energy balance in urban areas. Extended abstracts of an Expert Meeting. WG-2 COST Action 715, Antwerp, Belgium, 12 April 2000. Report EUR 19447, 104 pp.
- **Piringer**, M., Kukkonen, J. (eds.), 2002. Proceedings of the COST 715 Workshop "Mixing height and inversions in urban areas", Toulouse, France, 3-4 October 2001. European Commission, Brussels, Report EUR 20451, 113 pp.
- Rotach, M. W., B. Fisher, M. **Piringer** (eds.), 2003: COST-Action 715, Extended abstracts of the Workshop on Urban Boundary Layer Parameterisations, Zürich, Switzerland, May 24/25, 2001. European Commission, Brussels, Report EUR 20355, 118 pp.
- Fisher, B., S. Joffre, J. Kukkonen, M. **Piringer**, M. Rotach, M. Schatzmann (Eds.), 2005: Meteorology applied to urban air pollution problems. Final Report of COST Action 715. ISBN 954-9526-30-5, 276 pp. Demetra Ltd. Publishers. Printed in Bulgaria.

- **Piringer, M., S. Joffre (Eds.), 2005:** The urban surface energy budget and mixing height in European cities: data, models and challenges for urban meteorology and air quality. Final report of Working Group 2 of COST Action 715. ISBN 954-9526-29-1, 239 pp. Demetra Ltd. Publishers. Printed in Bulgaria.

### Conference proceedings and other publications (since 2000)

- Middleton, D. R., A. Martilli, M. **Piringer**, 2000: COST 715 - Working Group 2 expert meeting on surface energy balance in urban areas, Antwerp, Belgium, 12 April 2000. EURASAP Newsletter 38, 12 - 22.
- Schauburger, G., M. **Piringer**, E. Petz, 2000: Steady-state balance model to calculate the indoor climate of livestock buildings: a case study as a tool for livestock management. In: R. de Dear, J. Kalma, T. Oke, A. Auliciems (Eds.): *Biometeorology and Urban Climatology at the Turn of the Millenium, Selected papers from the Conference ICB/ICUC'99 (Sydney, 8 - 12 Nov. 1999)*, 359 - 363. WCASP Report 50, WMO/TD No. 1026.
- Schauburger, G., M. **Piringer**, E. Petz, 2000: Omnidirectional separation distance due to odour emission of livestock buildings calculated by the Austrian odour dispersion model (AODM). 2000 Annual International Meeting, American Society of Agricultural Engineering, July 9 - 12, 2000, Milwaukee, USA. ASAE Paper No. 4029, p. 1 - 21.
- Schauburger, G., M. **Piringer**, E. Petz, 2000: Dynamic model of the indoor climate of livestock buildings: a case study for fattening pigs. Proc. of the 1<sup>st</sup> Int. Conf. On Swine Housing, Iowa, October 2000, p. 340 - 347.
- Schauburger, G., M. **Piringer**, E. Petz, 2000: Modification of a Gauss dispersion model for the assessment of odour sensation in the vicinity of livestock buildings. ASAE, Proc. 2<sup>nd</sup> Int. Conf. on Air Pollution from Agricultural Operations, Iowa, October 2000, p. 345 - 352.
- Schauburger, G., M. **Piringer**, E. Petz, 2000: Using outside temperature to predict odour emission from mechanical ventilated livestock buildings. ASAE, Proc. 2<sup>nd</sup> Int. Conf. on Air Pollution from Agricultural Operations, Iowa, October 2000, p. 369 - 375.
- **Piringer, M., K. Baumann, U. Pechinger**, 2000: Scale interactions in meteorology - examples from Vienna and Graz, Austria. In: Mensink, C., N. Lewyckyj, J. Cools (Eds.): *Proceedings of the SIMPAQ-2000 Symposium: Scale Interactions in Models and Policies for Air Quality Management*, pp. 26 - 31, 13 - 14 April 2000, Antwerp, Belgium. Report 2000/TAP/55, VITO, June 2000.
- **Piringer, M.**, 2001: Preparation of meteorological input data for urban site studies. The present practice of the Austrian Weather Service. Proc. of the COST-Action 715 Workshop "Preparation of meteorological input data for urban site studies", Prague, Czech Republic, 15 June 2000, pp. 7 - 17. Report EUR 19446.
- Schauburger, G., M. **Piringer**, 2001: Predicting odour impact using the Austrian odour dispersion model. In: Jiang J. K. (Ed.): *1<sup>st</sup> IWA International Conference on Odour and VOCs: Measurement, Regulation and Control Techniques*, Sydney, 399 - 407.
- Baumann K., and M. **Piringer**, 2001: Two-years of boundary layer measurements with a Sodar - statistics and applications. *Physics and Chemistry of the Earth*, Part B. 26/3, 205-211.
- **Piringer, M.**, 2001: Exploring the urban boundary layer by sodar and tethersonde. *Physics and Chemistry of the Earth*, Part B. 26/3, 213-217.
- **Piringer, M.** and K. Baumann, 2001: Exploring the urban boundary layer by sodar and tethersonde. *Physics and Chemistry of the Earth*, Part B. 26/11-12, 881-885.

- **Piringer**, M. K. Baumann, 2002: Remote sensing in urban areas- recent advances. In: W. Pillmann, K. Tochtermann (Eds.): Proceedings of the 16<sup>th</sup> Int. Conference on Informatics for Environmental Protection (EnviroInfo Vienna 2002), Sept. 25 – 27, 2002, Univ. of Technology, Vienna, Austria, Vol. 1, 511 - 518.
- **Piringer**, M., G. Schaubberger, E. Petz, 2002: Modelling odour dispersion from livestock: Separation distance depending on odour impact criteria. Proc. 12<sup>th</sup> AMS Conf. on Air Poll. Meteorology, Norfolk, Virginia, paper 8.10, 105 – 106.
- Baumann, K., G. Rau, M. **Piringer**, U. Pechinger, 2002: Sodar measurements for the MAP Foehn campaign. Proc. 11<sup>th</sup> Int. Symposium on Acoustic Remote Sensing and Associated Techniques of the Atmosphere and Oceans (Eds.: S. Argentini, G. Mastrantonio, I. Petenko), 24. – 28. June 2002, Rome, Italy, pp. 287 – 290.
- Rotach, M. W., B. Fisher, M. **Piringer**, 2002: COST 715 Workshop on Urban Boundary Layer Parameterizations. Bull. AMS **83** (10), 1501 - 1504.
- Baumann, K., M. **Piringer**, G. Rau, U. Pechinger, 2003: ROM – Rhine valley ozone study within MAP. Österr. Beiträge zu Meteorologie und Geophysik **29**, 2 - 14.
- **Piringer**, M., S. Joffre, A. Baklanov, J. Burzynski, K. De Ridder, M. Deserti, A. Karppinen, P. Mestayer, D. Middleton, M. Tombrou, R. Vogt, A. Christen, 2004: The urban surface energy budget and the mixing height: some results of recent European experiments stimulated by the COST – Action 715. In: Proc. 9<sup>th</sup> Int. Conf. on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, 1. – 4. 6. 2004, Garmisch – Partenkirchen, D, Volume 2, 137 – 141.
- **Piringer**, M., E. Petz, G. Schaubberger, 2004: A sensitivity study of separation distances calculated with the Austrian Odour Dispersion Model (AODM). Extended Abstract "Environmental Odour Management", 17 – 19 November 2004, Cologne, Germany. VDI-Berichte 1850, 419 – 429.
- Schaubberger, G. und M. **Piringer**, 2004: Assessment of the odour concentration in the near-field of small sources. Extended Abstract "Environmental Odour Management", 17 – 19 November 2004, Cologne, Germany. VDI-Berichte 1850, 343 – 352.
- Schaubberger, G., M. **Piringer**, E. Petz, 2004: A sense of closeness. Bull. AMS **85** (10), 1480 – 1481.
- Schaubberger, G., M. **Piringer**, E. Petz, 2005: Sensitivity analyses of dispersion models to assess odour nuisance: a qualitative comparison with complaint statistics. Annalen der Meteorologie **41** (1), 333 – 336.
- Fisher, B., J. Kukkonen, M. **Piringer**, M. W. Rotach, M. Schatzmann, 2005: Meteorology applied to urban air pollution problems: concepts from COST 715. Atmos. Chem. Phys. Discuss. **5**, 7903 – 7927.
- Fisher, B., J. Kukkonen, M. **Piringer**, M. W. Rotach, M. Schatzmann, 2006: Meteorology applied to urban air pollution problems: concepts from COST 715. Atmos. Chem. Phys. **6**, 555 – 564.
- **Piringer**, M. and K. Baumann-Stanzer, 2006: The potential of additional vertical soundings to detect the flow and temperature structure in and around an urban area. Ext. abstract to the ISARS 13 conference, 18 – 20 July 2006, Garmisch – Partenkirchen. Forschungszentrum Karlsruhe in der Helmholtz – Gesellschaft, Wissenschaftliche Berichte FZKA 7222, 118 – 120, ISSN 0947-8620.
- Baumann-Stanzer, K. and M. **Piringer**, 2006: Comparison of tether sonde and RASS vertical temperature profiles during a morning inversion break-up. Ext. abstract to the ISARS 13 conference, 18 – 20 July 2006, Garmisch – Partenkirchen. Forschungszentrum Karlsruhe in der Helmholtz – Gesellschaft, Wissenschaftliche Berichte FZKA 7222, 144 – 145, ISSN 0947-8620.

- Schauberger, G., M. **Piringer**, E. Petz, 2006: A comparison of odour complaint statistics with model calculations of odour episodes. Odors and Air Emissions 2006. Hartford, Connecticut, USA, 9-12 April 2006, p 275 -288.
- Schauberger, G., M. **Piringer**, E. Petz, 2006: Assessment of odour annoyance by the use of dispersion models and odour impact criteria: a sensitivity study. Workshop on Agricultural Air Quality: State of the Science, Potomac, MD, 5 -8 June 2006, p1113-1121 (ISBN 0 9669770 4 1).
- Britter, R., M. Schatzmann (Eds), 2007: Background and justification document to support the model evaluation guidance and protocol. Contributing authors (from list): K. Baumann-Stanzer, M. **Piringer**. COST Action 732, report ISBN: 3-00-018312-4, 87 pp.
- Britter, R., M. Schatzmann (Eds), 2007: Model evaluation guidance and protocol document. Contributing authors (from list): K. Baumann-Stanzer, M. **Piringer**. COST Action 732, report ISBN: 3-00-018312-4, 27 pp.
- Franke, J., A. Hellsten, H. Schlünzen, B. Carissimo (Eds), 2007: Best practice guideline for the CFD simulation of flows in the urban environment. Contributing authors (from list): K. Baumann-Stanzer, M. **Piringer**. COST Action 732, report ISBN: 3-00-018312-4, 51 pp.
- **Piringer**, M., A. Kaiser 2008: Investigating a valley atmosphere with a Sodar/RASS and comparison to a flatland site. IOP Conf. Ser.: Earth Environ. Sci. 1 012006.
- Baumann-Stanzer, K., M. **Piringer**, E. Polreich, M. Hirtl, E. Petz, M. Bügelmayer, 2008: User experience with model validation exercises. Ext abstract of the 12th Int. Conf. on Harmonization within atmospheric dispersion modelling for regulatory purposes, Cavtat, Croatia, 6 – 10 October 2008. In: Croatian Meteorological Journal 43 (2008), Vol. 1, 52 – 56, ISSN 1330-0083.
- Schauberger, G., M. **Piringer**, W. Knauder, E. Petz, 2008: Re-calculation of the odour emission of a thermal treatment plant for waste by using a Monte-Carlo based model. 1<sup>st</sup> Int. Conf. On Environmental Odour Monitoring and Control (NOSE 2008), Rome.
- **Piringer**, M., K. Baumann-Stanzer, 2009: Selected results of a non-CFD model evaluation exercise. Proc. of short papers presented at the 7<sup>th</sup> Int. Conf. on Air Quality – Science and Application, Istanbul, 24 – 27 March 2009, on CD-Rom. Abstract on p. 356 of the Abstract Book.

### Current Scientific Activities / Gegenwärtige wissenschaftliche Aktivitäten

- Convenor at the EMS Annual Meeting (since 2007)
- Reviewing for Meteorologische Zeitschrift, Atmospheric Environment, Boundary-Layer Meteorology, Advances in Science and Research, Journal of Applied Meteorology and Climatology, Environmental Modeling and Assessment, etc.
- Reviewing of international project applications