

Publication list

Refereed publications

Balin, I., I. Serikov, S. Bobrovnikov, V. Simeonov, B. Calpini, Y. Arshinov, and H. Van den Bergh, "Simultaneous measurement of atmospheric temperature, humidity, and aerosol extinction and backscatter coefficients by a combined vibrational - pure-rotational Raman lidar", *Applied physics B*, **79**, pp. 775-782, (2004).

Barbante, C., M. Schwikowski, T. Döring, H.W. Gäggeler, U. Schotterer, L. Tobler, K. Van de Velde, C. Ferrari, G. Cozzi, A. Turetta, K. Rosman, M. Bolshov, G. Capodaglio, P. Cescon, C. Boutron, Historical record of European emissions of heavy metals to the atmosphere since the 1650s from an Alpine snow/ice core drilled near Monte Rosa, *Environ. Sci. Technol.* **38**, 4085-4090 (2004).

Barret, B., D.Hurtmans, M. Carleer, M. De Mazière, E. Mahieu and P.-F. Coheur, Line narrowing effect on the retrieval of HF and HCl vertical profiles from ground-based FTIR measurements, *Journal of Quantitative Spectroscopy and Radiative Transfer*, accepted, 2004.

Colaud Coen, M., E. Weingartner, D. Schaub, C. Hueglin, C. Corrigan, M. Schwikowski, U. Baltensperger, Saharan Dust Events at the Jungfraujoch: Detection by wavelength dependence of the single scattering albedo and first climatology analysis, *Atmos. Chem. Phys.* **4** 2465-2480, 2004.

Cramer, N. "Aspects of Geneva Photometry; Part 1, Equipment and historical background", *Orion* **5** (324), October 2004.

Cramer, N., "Aspects of Geneva Photometry; Part 2, Significance of multicolour photometry", *Orion* **6** (325), December 2004.

Dürr, B., and R. Philipona, Automatic cloud amount detection by surface longwave downward radiation measurements, *J. Geophys. Res.* **109**, D05201 doi: 10.1029/2003JD004182, 2004.

Eichler, A., M. Schwikowski, M. Furger, U. Schotterer, H.W. Gäggeler, Sources and distribution of trace species in Alpine precipitation inferred from two 60-year ice core paleorecords, *Atmos. Chem. Phys. Discuss.*, **4**, 71-108, (2004).

Fischer, R., S.M. Lang, M. Leitl, M. Thiery, U. Steiner, R.M. Huber, Theophylline and acetazolamide reduce sleep-disordered breathing at high altitude, *Euro Respir J* **23**, 47, 2004.

Gerber, D., I. Balin, D. Feist, N. Kämpfer, V. Simeonov, B. Calpini, H. van den Bergh, Ground-based water vapour soundings by microwave radiometry and Raman lidar on Jungfraujoch (Swiss Alps), *Atmospheric Chemistry and Physics*, **4**, pp.: 2171-2179, 2004.

Goutail, F., J.-P. Pommereau, F. Lefèvre, M. Van Roozendaal, S. B. Andersen, B.-A. Kåstad Høiskar, V. Dorokhov, E. Kyro, M. P. Chipperfield and W. Feng, Early unusual ozone loss during the Arctic winter 2002/03 compared to other winters, submitted to *Atmos. Chem. Phys.* (2004).

Guerova G., E. Brockmann, F. Schubiger, J. Morland, and Ch. Matzler: "Verification of the alpine Model with GPS Data in the Period 2001-2003" (2004), accepted for publication in *Journal of Applied Meteorology*, 2004.

Hendrick, F., B. Barret, M. Van Roozendaal, H. Boesch, A. Butz, M. De Mazière, F.

- Goutail, C. Hermans, J.-C. Lambert, K. Pfeilsticker, and J.-P. Pommereau, Retrieval of nitrogen dioxide stratospheric profiles from ground-based zenith-sky UV-visible observations: Validation of the technique through correlative comparisons, *Atmos. Chem. Phys.* **4**, 2091-2106, 2004.
- Henning S., S. Bojinski, S. Ghan, S. Nyeki, E. Weingartner, S. Wurzler, U. Baltensperger, Aerosol partitioning in natural mixed-phase clouds, *Geophys. Res. Lett.* **31**, doi:10.1029/2003GL019025, 2004.
- Hunt, L.K., Pierini, D., Giovanardi, C. Near-Infrared observations of galaxies in Pisces-Perseus. V: On the origin of bulges, *A&A*, **414**, 905, 2004.
- Kramer, C., Jakob, H., Mookerjea, B., Schneider, N., Brüll, M., Stutzki, J., Emission of CII, CI, and CO in W3Main, *Astron. & Astrophys.* **424**, 887, 2004.
- Levin, I. and B. Kromer, 2004. The tropospheric ¹⁴CO₂ level in mid-latitudes of the Northern Hemisphere (1959-2003). *Radiocarbon* **46**(3), in press.
- Lüthi, T., A. Lüdi, and M. Magun, Determination of the location and effective angular size of the solar flares with a 210 GHz multibeam radiometer, *A&A* **420**, 361-370 (2004).
- Lüthi, T., A. Magun, and M. Miller, First observation of a solar X-class flare in the submillimeter range with KOSMA, *A&A* **415**, 1123-1132 (2004).
- Olivier, S., K. Fifield, H.W. Gäggeler, P. Santschi, M. Schwikowski, U. Schotterer, L. Wacker, S. Bajo, T. Papina, Plutonium from global fallout recorded in an ice core from the Belukha Glacier, Siberian Altai, *Environ. Sci. Technol.* **38**, 6507-6512 (2004).
- Philipona, R., and B. Dürr, Greenhouse forcing outweighs decreasing solar radiation driving rapid temperature rise over land, *Geophys. Res. Letters*, **31**, L22208, doi:10.1029/2004GL020937, 2004.
- Philipona, R., B. Dürr, and C. Marty, Greenhouse effect and altitude gradients over the Alps – by surface longwave radiation measurements and model calculated LOR, *Theor. Appl. Climatol.* **77**, 1-7, 2004.
- Philipona, R., B. Dürr, Ch. Marty, A. Ohmura, and M. Wild, Radiative forcing – measured at Earth's surface – corroborate the increasing greenhouse effect, *Geophys. Res. Letters*, **31**, L03202, doi:10.1029/2003GL018765, 2004.
- Priller, A., M. Berger, H.W. Gäggeler, E. Gerasopoulos, P.W. Kubik, Ch. Schnabel, L. Tobler, E.-M. Wild, P. Zanis, Ch. Zerefos, Accelerator mass spectrometry of particle-bound ¹⁰Be, *Nuclear Instruments and Methods in Physics Research B* **223–224**, 601-607 (2004).
- Qin, Sheng-Li, Wu, Yue-Fang, Wang, Jun-Jie, Zhao, Gang, Shi Jian-Rong, Miller, M., Star Formation in Molecular Cloud Associated with IRAS 07028-1100, *Chinese Phys. Lett.* **21** 1677, 2004.
- Reimann, S., Schaub, D., Stemmler, K., Folini, D., Hofer, P., Buchmann, B., Simmonds, P.G., Grealley, B.R., and O'Doherty, S., Halogenated Greenhouse Gases at the Swiss High Alpine Site of Jungfraujoch (3850 m asl): Continuous Measurements and their Use for Regional European Source Allocation, *J. Geophys. Res.*, Vol. **109**, No. D5, D05307 10.1029/2003JD003923, 2004.
- Rinsland, C. P., E. Mahieu, R. Zander, A. Goldman, S. W. Wood, and L. S. Chiou,

Free Tropospheric Measurements of Formic Acid (HCOOH) from Infrared Ground-Based Solar Absorption Spectra: Retrieval Approach, Evidence for a Seasonal Cycle, and Comparison with Model Calculations, *J. Geophys. Res.*, **109**, D18308, doi:10.1029/2004JD004917, 2004.

Schwikowski, M., C. Barbante, T. Döring, H.W. Gäggeler, C. Boutron, U. Schotterer, L. Tobler, K. Van de Velde, C. Ferrari, G. Cozzi, K. Rosman, P. Cescon, Post-17th-century changes of European lead emissions recorded in high-altitude Alpine snow and ice, *Environ. Sci. Technol.* **38**, 957-964 (2004).

Sturm, P., M. Leuenberger, C. Sirignano, R. E. M. Neubert, H. A. J. Meijer, R. Langenfelds, W. A. Brand, and Y. Tohjima, Permeation of atmospheric gases through polymer O-rings used in flasks for air sampling, *J. Geophys. Res.*, **109**, D04309, doi:10.1029/2003JD004073, 2004.

Sutter, M., B. Dürr, and R. Philipona, Comparison of two radiation algorithms for surface-based cloud-free detection, *J. Geophys. Res.* **109**, D17202, doi:10.1029/2004JD004582, 2004.

Taslakov, M., V. Simeonov, and H. van den Bergh, "Ozone detection by Quantum Cascade Laser Single-pulse spectroscopy", submitted to *Applied Physics B*.

Taslakov, M., V. Simeonov, and H. van den Bergh, "Quantum cascade laser based system for line-of-sight data transmission in the mid IR", to be published in "Laser physics and applications", SPIE vol. 5930, in print.

Taslakov, M., V. Simeonov, and H. van den Bergh, "Open path trace gas measurements using pulse quantum cascade laser", to be published in "Laser physics and applications", SPIE vol. 5930, in print.

Tositti, L., S. Hübner, H.J. Kanter, W. Ringer, S. Sandrini, L. Tobler, Intercomparison of sampling and measurements of ⁷Be in air at four high-altitude locations in Europe, *Appl. Radiat. Isot.* **61**, 1497-1502 (2004).

Troller M., A. Geiger, E. Brockmann and H.-G. Kahle: "Influence of Tropospheric Water Vapor on GPS Measurements and its Mitigation using Permanent GPS Networks", accepted for publication in *Geophys. J. Int.*, 2004.

Troller M., A. Geiger, E. Brockmann, J.-M. Bettems, B. Bürki, H.-G. Kahle: "Tomographic Determination of the Spatial Distribution of Water Vapor Using Remote Sensing Techniques", accepted for publication in *Advances in Space Research*, 2004.

Van Dingenen, R., F. Raes, J.P. Putaud, U. Baltensperger, A. Charron, M.C. Facchini, S. Decesari, S. Fuzzi, R. Gehrig, H.C. Hansson, R.M. Harrison, C. Hüglin, A.M. Jones, P. Laj, G. Lorbeer, W. Maenhaut, F. Palmgren, X. Querol, S. Rodriguez, J. Schneider, H. ten Brink, P. Tunved, K. Tørseth, B. Wehner, E. Weingartner, A. Wiedensohler, P. Wahlin, A European aerosol phenomenology-1: physical characteristics of particulate matter at kerbside, urban, rural and background sites in Europe *Atmos. Environ.* **38**, 2561-2577, 2004.

Yurganov, L.N., P. Duchatelet, A.V. Dzhola, D.P. Edwards, F. Hase, I. Kramer, E. Mahieu, J. Mellqvist, J. Notholt, P.C. Novelli, A. Rockmann, H.E. Scheel, M. Schneider, A. Schulz, A. Strandberg, R. Sussmann, H. Tanimoto, V. Velasco, J.R. Drummond, and J.C. Gille, Increased Northern Hemispheric carbon monoxide burden in the troposphere in 2002 and 2003 detected from the ground and from space, *Atmos.*

Chem. Phys. Discuss., **4**, 4999-5017, 2004b.

Yurganov, L.N., T. Blumenstock, E.I. Grechko, F. Hase, E.J. Hyer, E.S. Kasischke, M. Koike, Y. Kondo, I. Kramer, F.-Y. Leung, E. Mahieu, J. Mellqvist, J. Notholt, P.C. Novelli, C.P. Rinsland, H.E. Scheel, A. Shultz, A. Strandberg, R. Sussmann, H. Tanimoto, V. Velazco, R. Zander, and Y. Zhao, A Quantitative Assessment of the 1998 Carbon Monoxide Emission Anomaly in the Northern Hemisphere Based on Total Column and Surface Concentration Measurements, *J. Geophys. Res.*, **109** (D15), D15305, doi:10.1029/2004JD004559, 2004a.

Conference presentations / Posters

Balin, I., M. Parlange, B. Calpini, V. Simeonov, and H. van den Bergh, "Elevated atmospheric boundary layer over the Swiss Alps during the August 2003 heat wave", in the proceedings of the 22nd International laser Radar Conference, Matera, Italy, 8-12 July 2004, pp 781-784.

Balin, I., V. Simeonov, I. Serikov, S. Bobrovnikov, B. Calpini, Y. Arshinov, and H. van den Bergh, "Simultaneous measurement of temperature, water vapor, aerosol extinction and backscatter by Raman lidar", in the proceedings of the 22nd International laser Radar Conference, Matera, Italy, 8-12 July 2004, pp.139-142, pp. 139-142.

Bower, K., M. Flynn, M. Gallagher, J. Allan, J. Crosier, T. Choulaton, H. Coe, R. Burgess, U. Baltensperger, E. Weingartner, S. Mertes, J. Schneider, Measurements of wintertime cloud-aerosol interactions at the Jungfraujoch mountain-top site in the Swiss alps, oral presentation at the AAAR Fall Meeting, Atlanta, Georgia, October 2004.

Brockmann E., D. Ineichen, G. Guerova, J.-M. Bettems, A. Somieski, M. Troller, M. Becker and P. Haeferle (2004): "Activities of swisstopo in GPS meteorology", Paper presented at the IGS workshop Berne, March 1-5, 2004.

Brüll, M., Kramer, C., Ossenkopf, V., Simon, R., Stutzki, J., The KOSMA large scale CO survey of clouds in the Galactic Molecular ring *Astrophysics and Space Science* **289**, 3, 255, 2004.

Camy-Peyret, C., G. Dufour, S. Payan, H. Oelhaf, G. Wetzel, G. Stiller, T. Blumenstock, C.E. Blom, T. Gulde, N. Glatthor, A. Engel, M. Pirre, V. Catoire, G. Moreau, M. De Mazière, C. Vigouroux, E. Mahieu, U. Cortesi, F. Mencaraglia, Validation of MIPAS N₂O profiles by stratospheric balloon, aircraft and ground based measurements, Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2) (Esrin, Italy, May 3-7, 2004), SP-562 (ESA), 241-249, 2004.

Cozic J., S. Mertes, E. Weingartner, B. Verheggen, A. Petzold, U. Baltensperger, Scavenging ratio of Black Carbon by cloud droplets and ice crystals at the high Alpine site Jungfraujoch (3580 m asl.), Proc. EAC 2004, Budapest, Hungary, *J. Aerosol Sci.* **I**, S71-S72, September 6-10, 2004.

De Mazière, M, B. Barret, C. Vigouroux, T. Blumenstock, F. Hase, I. Kramer, C. Camy-Peyret, P. Chelin, T. Gardiner, M. Coleman, P. Woods, K. Ellingsen, M. Gauss, I. Isaksen, E. Mahieu, P. Demoulin, P. Duchatelet, J. Mellqvist, A. Strandberg, V. Velazco, A. Shulz, J. Notholt, R. Sussmann, W. Stremme, and A. Rockmann, Ground-based FTIR measurements of O₃- and climate-related gases in the free troposphere

and lower stratosphere, in *Ozone, Vol. I*, Proceedings of the XX Quadrennial Ozone Symposium, Kos, Greece, 1-8 June 2004, ISBN 960-630-103-6, pp. 529-530, 2004.

De Mazière, M., B. Barret, T. Blumenstock, M. Buchwitz, R. De Beek, P. Demoulin, H. Fast, A. Gloudemans, A. Griesfeller, D. Griffith, D. Ionov, K. Janssens, N. Jones, E. Mahieu, J. Mellqvist, R. L. Mittermeier, J. Notholt, C. Rinsland, H. Schrijver, A. Schultz, D. Smale, A. Strandberg, K. Strong, R. Sussmann, T. Warneke, S. Wood, comparisons between sciamachy scientific products and groundbased FTIR data for total columns of CO, CH₄ and N₂O, Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2) (Esrin, Italy, May 3-7, 2004), SP-562 (ESA), 97-104, 2004.

Flückiger, E.O., R. Bütikofer, L. Desorgher, M.R. Moser, Y. Muraki, Y. Matsubara, T. Sako, H. Tsuchiya, and T. Sakai, The giant Forbush decrease in October/November 2003: Data analysis for the solar neutron detector at Gornergrat, 19th European Cosmic Ray Symposium, Proceedings, Florence, Italy, 2004, to be published in the International Journal of Modern Physics A.

Gerber, D., I. Balin, D. G. Feist, N. Kämpfer, V. Simeonov, B. Calpini, H. van den Bergh, Ground-based water vapour soundings by microwave radiometry and Raman lidar on Jungfrauoch, COST-723 opening workshop, ESTEC, Noordwijk (NL), March 2004.

Haeberlin, H., "Grid-connected PV Plant Jungfrauoch (3454m) in the Swiss Alps: 10 Years of trouble-free Operation with Record Energy Yields", Proc. 19th EU PV conference, Paris, 2004.

Häfele, P., L. Martin, M. Becker, E. Brockmann, J. Morland, S. Nyeki, C. Matzler, and M. Kirchner, Impact of radiometric water vapor measurements on troposphere and height estimates by GPS, Institute of Navigators GNSS Conference, 21-24 Sept., Long Beach, California, 2004.

Häfele, P., M. Becker, E. Brockmann, L. Martin, S. Ye and M. Kirchner (2004): "MATRAG – Measurement of Alpine Tropospheric Delay by Radiometer and by GPS", Paper presented at the IGS workshop Berne, March 1-5, 2004.

Häfele, P., M. Becker, M. Kirchner, L. Martin and E. Brockmann (2004): "Impact of WVR Measurements on Troposphere and Height Estimates by GPS", Paper presented at the ION GNSS 2004 meeting, Session F5 GPS Meteorology, Long Beach, September 21-24, 2004.

Henning, S., T. Rosenørn, E. Weingartner, U. Baltensperger, M. Bilde, Activation behavior of ambient aerosol (Jungfrauoch, 3580 m asl), Proc. EAC 2004, Budapest, Hungary, J. Aerosol Sci. I, S67-S68, September 6-10, 2004.

Kämpfer, N., et al., Microwave remote sensing of water vapour, Asia Oceania Geoscience Society, Singapore, July 2004.

Knap, W., S. Nyeki., A. Los., P. Stammes, Sunphotometry at the High Altitude Research Station Jungfrauoch, International Radiation Symposium, Seoul, Korea, 2004.

Lambert, J-C., M. Allaart, S. B. Andersen, T. Blumenstock, G. Bodeker, E. Brinksma, C. Cambridge, M. De Mazière, P. Demoulin, P. Gerard, M. Gil, F. Goutail, J. Granville, D. V. Ionov, E. Kyrö, M. Navarro-Comas, A. Piters, J-P. Pommereau, A. Richter, H. K. Roscoe, H. Schets, J.D. Shanklin, T. Suortti, R. Sussmann, M. Van

Rozendael, C. Varotsos, T. Wagner, S. Wood, and M. Yela, First Ground-Based Validation of SCIAMACHY V5.01 Ozone Column, in Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2), ESA-ESRIN, Frascati, Italy, 3-7 May 2004 (ESA SP-562, August 2004) ESC01JL1.

Lambert, J-C., T. Blumenstock, F. Boersma, A. Bracher, M. De Mazière, P. Demoulin, I. De Smedt, H. Eskes, M. Gil, F. Goutail, J. Granville, F. Hendrick, D. V. Ionov, P. V. Johnston, I. Kostadinov, K. Kreher, E. Kyrö, R. Martin, A. Meier, M. Navarro-Comas, A. Petritoli, J-P. Pommereau, A. Richter, H. K. Roscoe, C. Sioris, R. Sussmann, M. Van Roozendael, T. Wagner, S. Wood, and M. Yela, Geophysical Validation of SCIAMACHY NO₂ Vertical Columns: Overview of Early 2004 Results, in Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2), ESA-ESRIN, Frascati, Italy, 3-7 May 2004 (ESA SP-562, August 2004) ESC01JL2.

Mahieu, E., P. Duchatelet, R. Zander, P. Demoulin, C. Servais, C.P. Rinsland, M.P. Chipperfield, and M. De Mazière, The evolution of inorganic chlorine above the Jungfraujoch station: An update, in *Ozone, Vol. II*, Proceedings of the XX Quadrennial Ozone Symposium, Kos, Greece, 1-8 June 2004, pp. 997-998, 2004.

Mertes, S., A Counterflow Virtual Impactor (CVI) System for Sampling of freshly formed Ice Particles in Mixed-Phase Clouds at the high Alpine Research Station Jungfraujoch (3580 m): Functionality and first results, Workshop on 'The Tropospheric Ice-Phase', Frankfurt, Germany, 10 – 11 November 2004.

Mertes, S., A. Schwarzenböck, J. Schneider, S. Walter, M. Ebert, M. Inerle-Hof, B. Verheggen, J. Cozic, E. Weingartner, Design and operation of a counterflow virtual impactor inlet system to collect small ice particles out of mixed phase clouds at the high alpine site Jungfraujoch (3580m asl), *Journal of Aerosol Science*, Volume **35**, Supplement 1, July 2004, S167-168.

Moser, M.R., E.O. Flückiger, R. Bütikofer, L. Desorgher, Y. Muraki, Y. Matsubara, T. Sako, H. Tsuchiya, and T. Sakai, The Extreme Solar Events and the Giant Forbush Decrease in October/November 2003: Analysis of Ground-based Cosmic Ray Data, 35th COSPAR Scientific Assembly, Paris, France, 2004.

Nessler R., E. Weingartner, U. Baltensperger, Adaptation of dry nephelometer measurements to ambient conditions at the Jungfraujoch, 1st EGU General Assembly, Nice, France, 6, 00933, April 25-30, 2004.

Oelhaf, H., T. Blumenstock, M. De Mazière, S. Mikuteit, C. Vigouroux, S. Wood, G. Bianchini, R. Baumann, C. Blom, U. Cortesi, G.Y. Liu, H. Schlager, C. Camy-Peyret, V. Catoire, M. Pirre, K. Strong, G. Wetzell, Validation of MIPAS-ENVISAT version 4.61 HNO₃ operational data by stratospheric balloon, aircraft and ground-based measurements, Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2) (Esrin, Italy, May 3-7, 2004), SP-562 (ESA), 250-256, 2004.

Papayannis, A. et al, "Saharan dust outbreaks towards Europe: 3 years of systematic observations by the European lidar network in the frame of the EARLINET project (2000-2003)", in the proceedings of the 22nd International laser Radar Conference, Matera, Italy, 8-12 July 2004, pp. 845-848.

Philipona, R., and B. Dürr, Exponential temperature increase in central Europe: Under decreasing solar– but strongly increasing greenhouse warming, *American Geo-*

physical Union, 2004 Joint Assembly, Montreal, Canada, May 17-21, 2004.

Philipona, R., Messung des Strahlungsantriebes an der Erdoberfläche bestätigen die Zunahme des Treibhauseffektes, DACH Meteorologentagung, Karlsruhe, Deutschland, September 7-10, 2004.

Schneider, J., S. Walter, N. Hock, J. Curtius, S. Borrmann, S. Mertes, J. Heintzenberg, E. Weingartner, B. Verheggen, J. Cozic, U. Baltensperger, Mass Spectrometric Analysis of Ice and Supercooled Cloud Residuals during CLACE-3, poster at the AAAR Fall Meeting, Atlanta, Georgia, October 2004.

Simeonov, V., P. Ristori, I. Balin, B. Calpini, H. van den Bergh, "A New DIAL Based on a N₂ Raman Converter for Ozone Monitoring; Design and Application during the ESCOMPTE Campaign", in the proceedings of the XX Quadrennial Ozone Symposium, Kos Greece, 1-8 June, 2004, V.1, pp. 109-110.

Taslakov, M., V. Simeonov, and H. van den Bergh, "Ozone detection by Quantum Cascade Laser Single-pulse spectroscopy", in the proceedings of the XX Quadrennial Ozone Symposium, Kos Greece, 1-8 June 2004, V. 1 pp. 603-604.

Taslakov, M.A. V.B. Simeonov, H. van den Bergh ; "Ozone detection by quantum cascade laser", 8-th International Global Atmospheric Chemistry Conference 4-9 September 2004 Christchurch, New Zealand.

Troller M., A. Geiger, E. Brockmann, J.-M. Bettems, B. Bürki, H.-G. Kahle: "Tomographic determination of the spatial distribution of water vapor using remote sensing techniques", Solicited presentation at the 35th Committee on Space Research (COSPAR) Scientific Assembly Paris, France, 2004.

Van Ekeren J.S., M. Fierz, U. Baltensperger, H. Burtscher, E. Weingartner, CCN measurements with an expansion type CCN counter at a high alpine site, Proc. EAC 2004, Budapest, Hungary, J. Aerosol Sci., I, S133-S134, September 6-10, 2004.

Verheggen B., J. Cozic, E. Weingartner, S. Sjögren, J.S. van Ekeren, N. Bukowiecki, R. Schmidhauser, U. Baltensperger, S. Mertes, K.N. Bower, M.J. Flynn, J.D. Allan, M.W. Gallagher, J. Crosier, H. Coe, T.W. Choulaton, J. Schneider, S. Walter, S. Henning, T. Rosenørn, M. Bilde, A. Petzold, E. Barthazy, M. Inerle-Hof, M. Ebert, S. Weinbruch, CLACE 3: Third Cloud and Aerosol Characterization Experiment conducted at a High Alpine Site in the Free Troposphere, Proc. EAC 2004, Budapest, Hungary, J. Aerosol Sci. I, S171-S172, September 6-10, 2004.

Walter, S., J. Schneider, J. Curtius, F. Drewnick, N. Hock, S. Mertes, B. Verheggen, E. Weingartner, M. Ettner, S. Borrmann, In-situ-Messungen von Eiskristall-Residuen mit dem Aerosol-Massenspektrometer im Rahmen der CLACE-3-Messkampagne: Erste Ergebnisse und Ausblick für den SFB 641, oral presentation at the workshop „Die troposphärische Eisphase“ (TROPEIS II), Frankfurt 2004.

Walter, S., J. Schneider, N. Hock, J. Curtius, S. Mertes, S. Borrmann, Chemical composition of the free tropospheric aerosol at the Jungfraujoch, poster at the 1st French-German Summer School, Ile d'Oléron, September 2004.

Weingartner E., Aging processes of soot particles in the atmosphere, 8th ETH conference on combustion generated particles, ETH, Zürich, CD, August 16-18, 2004.

Weingartner E., S. Sjögren, J. Cozic, B. Verheggen, U. Baltensperger, Hygroscopic properties and chemical composition of aerosol particles at the high alpine site Jungfraujoch, Proc. EAC 2004, Budapest, Hungary, J. Aerosol Sci. I, S135-S136,

2004.

Weingartner E., Wintermesskampagne CLACE-3 auf dem Jungfrauojoch (3580 m.ü.M.) im Überblick Tropeis II, Die troposphärische Eisphase, Frankfurt am Main, Germany, November 10-11, 2004.

Wetzel, G., T. Blumenstock, H. Oelhaf, G.P. Stiller, D.-Y. Wang, G. Zhang, M. Pirre, F. Goutail, A. Bazureau, J.-P. Pommereau, A. Bracher, M. Sinnhuber, M. Weber, K. Bramstedt, B. Funke, M. López-Puertas, I. Kostadinov, A. Petritoli, A. Alfaro, F. Hendrick, M. Van Roozendaal, M. De Mazière, Validation of MIPAS-ENVISAT version 4.61 operational data: NO₂, Proceedings of the Second Workshop on the Atmospheric Chemistry Validation of ENVISAT (ACVE-2) (Esrin, Italy, May 3-7, 2004), SP-562 (ESA), 234-240, 2004.

Edited books

Calpini, B., V. Simeonov, Trace Gas species detection in the lower atmosphere by lidar in Takashi Fujii and Tetsuo Fukuchi (eds.) *Laser Remote Sensing*,: Dekker/CRC Press, in press.

Zander, R., and M. De Mazière, Atmospheric composition changes: Causes and processes at work, in “Assessment and Integration Report on Global Change-Related Projects Funded by the OSTC in the Area of Natural Sciences During 1990-2002”, in press, 2004.

Schüpbach, E., and Stuart A. Penkett, Swiss-British Collaboration on the Jungfrauojoch 1991-2003.

Schwikowski, M., Reconstruction of European air pollution from Alpine ice cores. In: *Earth Paleoenvironments: Records preserved in Mid- and Low-Latitude Glaciers*, Eds. L.D. Cecil, J.R. Green, and L.G. Thompson, Kluwer Academic Publishers, Dordrecht, pp. 95-119 (2004).

Theses

Balin, I., Monitoring of atmospheric water vapor, temperature, and aerosol by a multi-wavelength elastic-Raman lidar Data books and reports, PhD Thesis No 2975 EPFL, 2004.

Dürr, B., The Greenhouse Effect in the Alps – by models and observations, submitted to the Swiss Federal Institute of Technology, Zürich, pp.92, 2004.

Lüthi, T., Solar Flares at Millimeter and Submillimeter Wavelengths – Instrumental Techniques and Observations, PhD Thesis, Universität Bern, 2004.

Nessler, R., Dry and Ambient Aerosol Properties at the Jungfrauojoch, PhD Thesis No 3051 EPFL, 2004.

Troller M.: "GPS based Determination of the Integrated and Spatially Distributed Water Vapor in the Troposphere", Diss ETH No. 15513, 2004.

Vasic, V., An airborne millimetre-wave radiometer at 183 GHz: receiver development and stratospheric water vapour measurements, PhD Thesis, Universität Bern, 2004.

Data publications and reports

“Le rayonnement atmosphérique et son réseau de mesure suisse” in *Annalen 2003 MeteoSchweiz*, Zürich (August 2004).

“Ozone, rayonnement UV et aérosols (GAW)” in *Annalen 2003 MeteoSchweiz*, Zürich (August 2004).

25 Jahre NABEL, Fachtagung, Dübendorf, 16. Januar 2004, *Umwelt-Materialien* Nr. 171 Luft, published by BUWAL Bundesamt für Umwelt, Wald und Landschaft, Bern 2004.

Alexandrescu, D., L. Anghel, M. Nicolaidis, “Simulating Single Event Transients in VDSM ICs for Ground Level Radiation”, *Journal for Electronic Testing: Theory and Applications*, 20, 413-421, 2004.

Annual Report, Institute of Applied Physics, University of Bern, 1.7.2003—30.6.2004, Bern, 2004.

Häberlin, H.: “Hochalpine Photovoltaikanlagen – Langzeiterfahrungen mit Fassadenanlagen“ (in German). *Elektrotechnik* 6+7, 2004.

Häberlin, H.: “Netzgekoppelte Photovoltaikanlage Jungfraujoch: 10 Jahre störungsfreier Betrieb mit Rekord-Energieerträgen“ (in German) *SEV/VSE-Bulletin* 10/2004.

Harris, N. and M. De Mazière, *The Montreal Protocol: Stratospheric Ozone Depletion and Surface UV Radiation*, in *GMES-GATO, A European Strategy for Global Atmospheric Monitoring*, EUR 21154, (European Commission, Brussels), Chapter 1, 2004

Henning, S., T. Rosenørn, E. Weingartner, U. Baltensperger, and M. Bilde, *Cloud condensation nuclei measurements at Jungfraujoch, 3580 m asl*, Report Series in Aerosol Science, Finish Association for Aerosol Research, 2005 **71A**, 173-176.

Mertes, S., *Ice nuclei: field measurements on Jungfraujoch*, colloquium of atmospheric and environmental sciences, Institut für Meteorologie und Geophysik, University of Frankfurt/Main, 15 July, 2004.

Philipona, R., and A. Ohmura, “Messung des Treibhauseffektes in den Alpen”, *ETH Bulletin, Magazin der Eidgenössischen Technischen Hochschule Zürich*, Nr 293, Mai 2004.

Sugiyama, S., and B. Müller, M. Funk, *Outburst flood of the glacier dammed lake on Gornergletscher*, Annual report 2004, VAW, ETH Zürich, 2005.

Umweltradioaktivität und Strahlendosen in der Schweiz 2003, Bundesamt für Gesundheit, Abteilung Strahlenschutz, Prof. Editor Dr. H. Völkle, Fribourg, June, 2004.

Vonder Müll, D., J. Nötzli, K. Makowski, and R. Delaloye, *Permafrost in Switzerland 2000/2001 and 2001/2002*, Glaciological Report (Permafrost) No. **2/3**.

Zander, R. and M. De Mazière, *Atmospheric composition changes: causes and processes involved*, in *Belgian Global Change Research 1990-2002, Assessment and Integration Report*, Main Eds.: M. G. Den Ouden and M. Vanderstraeten, Scientific editors: R. Ceulemans, M. De Mazière, I. Nijs, J.-P. Vanderborgh, J.-P. Van Ypersele, R. Wollast, R. Zander, Chapter 1, in press, 2005.

Popular publications and presentations

Swiss Alpine Airborne SAR Experiment SASARE DVD film, Universität Zürich, Geographisches Institut, Abteilung Fernerkundung, 2004.

Radio and television

“CLACE-3 Reportage” Interview with the atmospheric scientists Stefan van Eckeren, PSI Villigen, and Dr. Stephan Mertes, IFT Leipzig, Radio DRS 1 and DRS 3, “Rendezvous am Mittag”, April 2 and 5, 2004.

Funk, Martin, VAW, ETH Zürich, TV SF1, “Schweiz aktuell”, July 23, 2004.

Weingartner, E. Reportage zu CLACE-3, Beitrag zur Sendung: Regionaljournal AG/SO, DRS1 und DRS3, April 2 + 5, 2004.

Weingartner, E., Breathing in thin air, Beitrag zur Sendung (Video-Reportage): Swissinfo, April 9, 2004.

Weingartner, E., Ein Forscher jagt Wolken, Bericht im Swissinfo, April 9, 2004.

Weingartner, E., Reportage zu CLACE-3, Beitrag zur Sendung: Rendezvous am Mittag, DRS1, March 31, 2004.

Weingartner, E., Reportage zu CLACE-3, Bericht im Tele M1, April 3, 2004.

Weingartner, E., Particles cloud researchers' judgement, Beitrag zur Sendung: Swissinfo, April 27, 2004.