

## Publication list

- 39 Refereed publications
- 4 Bachelor (1), Master (1) and PhD (2) theses
- 61 Conference presentations / posters
- 1 Books / edited books
- 8 Popular publications and presentations
- 8 Data books and reports

### Refereed publications

- Asmi, A., M. Collaud Coen, J.A. Ogren, E. Andrews, P. Sheridan, A. Jefferson, E. Weingartner, U. Baltensperger, N. Bukowiecki, H. Lihavainen, N. Kivekäs, E. Asmi, P.P. Aalto, M. Kulmala, A. Wiedensohler, W. Birmili, A. Hamed, C. O'Dowd, S.G. Jennings, R. Weller, H. Flentje, A.M. Fjaeraa, M. Fiebig, C.L. Myhre, A.G. Hallar, E. Swietlicki, A. Kristensson, P. Laj, Aerosol decadal trends – Part 2: In-situ aerosol particle number concentrations at GAW and ACTRIS stations, *Atmos. Chem. Phys.*, **13**, 895-916, doi: 10.5194/acp-13-895-2013, 2013.  
<http://dx.doi.org/10.5194/acp-13-895-2013>
- Beddows, D. C. S., M. Dall'Osto, R.M. Harrison, M. Kulmala, A. Asmi, A. Wiedensohler, P. Laj, A.M. Fjaeraa, K. Sellegri, W. Birmili, N. Bukowiecki, E. Weingartner, U. Baltensperger, V. Zdimal, N. Zikova, J.-P. Putaud, A. Marinoni, P. Tunved, H.-C. Hansson, M. Fiebig, N. Kivekäs, E. Swietlicki, H. Lihavainen, E. Asmi, V. Ulevicius, P.P. Aalto, N. Mihalopoulos, N. Kalivitis, I. Kalapov, G. Kiss, G. de Leeuw, B. Henzing, C. O'Dowd, S.G. Jennings, H. Flentje, F. Meinhardt, L. Ries, H.A.C. Denier van der Gon and A.J.H. Visschedijk, Variations in tropospheric submicron particle size distributions across the European continent 2008–2009, *Atmos. Chem. Phys. Discuss.*, **13**, 31197-31249, doi: 10.5194/acpd-13-31197-2013, 2013.  
<http://dx.doi.org/10.5194/acpd-13-31197-2013>
- Berchet A., I. Pison, F. Chevallier, P. Bousquet, S. Conil, M. Geever, T. Laurila, J. Lavric, M. Lopez, J. Moncrieff, J. Necki, M. Ramonet, M. Schmidt, M. Steinbacher, J. Tarniewicz, Towards better error statistics for atmospheric inversions of methane surface fluxes, *Atmospheric Chemistry and Physics*, **13**, 7115-7132, doi:10.5194/acp-13-7115-2013, 2013.  
<http://www.atmos-chem-phys.net/13/7115/2013/acp-13-7115-2013.html>
- Cao, F., Y.L. Zhang, S. Szidat, A. Zapf, L. Wacker, M. Schwikowski, Microgram-level radiocarbon determination of carbonaceous particles in firn and ice samples: pretreatment and OC/EC separation, *Radiocarbon*, **55**, 2-3, 383-390, doi: 10.2458/azu\_js\_rc.55.16291, 2013.  
<https://journals.uair.arizona.edu/index.php/radiocarbon/article/view/16291>
- Collaud Coen, M., E. Andrews, A. Asmi, U. Baltensberger, N. Bukowiecki, D. Day, M. Fiebig, A.M. Fjaeraa, H. Flentje, A. Hyvärinen, A. Jefferson, S.G. Jennings, G. Kouvarakis, H. Lihavainen, C.L. Myhre, W.C. Malm, N. Mihalopoulos, J.V. Molenaar, C. O'Dowd, J.A. Ogren, B.A. Schichtel, P. Sheridan, A. Virkkula, E. Weingartner, R. Weller, P. Laj, Aerosol decadal trends – Part 1: In-situ optical measurements at GAW and IMPROVE stations, *Atmos. Chem. Phys.*, **13**, 869-894, doi: 10.5194/acp-13-869-2013, 2013.  
<http://dx.doi.org/10.5194/acp-13-869-2013>
- Deolal, S.P., J. Staehelin, D. Brunner, J.B. Cui, M. Steinbacher, C. Zellweger, S. Henne, M.K. Vollmer, Transport of PAN and NO<sub>y</sub> from different source regions to the Swiss high alpine site Jungfraujoch, *Atmospheric Environment*, **64**, 103-115, doi: 10.1016/j.atmosenv.2012.08.021, 2013.  
<http://www.sciencedirect.com/science/article/pii/S1352231012007935>
- Duflot, V., D. Hurtmans, L. Clarisse, Y. R'Honi, C. Vigouroux, M. De Maziere, E. Mahieu, C. Servais, C. Clerbaux, P.F. Coheur, Measurements of hydrogen cyanide (HCN) and acetylene (C<sub>2</sub>H<sub>2</sub>) from the Infrared Atmospheric Sounding Interferometer (IASI), **6**, 4, 917-925, doi: 10.5194/amt-6-917-2013, 2013.  
<http://www.atmos-meas-tech.net/6/917/2013/amt-6-917-2013.html>
- Fang S.X., L.X. Zhou, P.P. Tans, P. Ciais, M. Steinbacher, L. Xu, T. Luan, In-situ measurement of atmospheric CO<sub>2</sub> at the four WMO/GAW stations in China, *Atmospheric Chemistry and Physics Discussions*, **13**, 27287-27326, doi:10.5194/acpd-13-27287-2013, 2013.  
<http://www.atmos-chem-phys-discuss.net/13/27287/2013/acpd-13-27287-2013.html>
- Froehlich, R., M.J. Cubison, J.G. Slowik, N. Bukowiecki, A.S.H. Prevot, U. Baltensperger, J. Schneider, J.R. Kimmel, M. Gonin, U. Rohner, D.R. Worsnop, J.T. Jayne, The ToF-ACSM: a portable aerosol chemical speciation monitor with TOFMS detection, *Atmospheric Measurement Techniques*, **6**, 11, 3225-3241, doi: 10.5194/amt-6-3225-2013, 2013.  
<http://www.atmos-meas-tech.net/6/3225/2013/amt-6-3225-2013.html>
- Girard, L., S. Gruber, S. Weber and J. Beutel, Environmental controls of frost cracking revealed through in-situ acoustic emission measurements in steep bedrock, *Geophysical Research Letters*, **40**, 9, 1748-1753, doi: 10.1002/grl.50384, 2013.  
<http://onlinelibrary.wiley.com/doi/10.1002/grl.50384/abstract?globalMessage=0>

- Gorczyca, Z., T. Kuc, K. Rozanski, Concentration of radiocarbon in soil-respired CO<sub>2</sub> flux: data-model comparison for three different ecosystems in southern Poland, *Radiocarbon*, **55**, 2-3, 1521-1532, doi: 10.2458/azu\_js\_rc.55.16321, 2013.  
<https://journals.uair.arizona.edu/index.php/radiocarbon/article/view/16321>
- Hall, B.D., A. Engel, J. Muhle, J.W. Elkins, F. Artuso, E. Atlas, M. Aydin, D. Blake, E.-G. Brunke, S. Chiavarini, P.J. Fraser, J. Happell, P.B. Krummel, I. Levin, M. Loewenstein, M. Maione, S.A. Montzka, S. O'Doherty, S. Reimann, G. Rhoderick, E.S. Saltzman, H.E. Scheel, L.P. Steele, M.K. Vollmer, R.F. Weiss, D. Worthy, Y. Yokouchi, Results from the International Halocarbon in Air Comparison Experiment (IHALACE), *Atmos. Meas. Tech.*, **6**, 8021-8069, doi:10.5194/amtd-6-8021-2013, 2013.  
<http://www.atmos-meas-tech-discuss.net/6/8021/2013/amtd-6-8021-2013.html>
- Hammer, E., N. Bukowiecki, M. Gysel, Z. Jurányi, C.R. Hoyle, R. Vogt, U. Baltensperger and E. Weingartner, Investigation of the effective peak supersaturation for liquid-phase clouds at the high-alpine site Jungfraujoch, Switzerland (3580 m a.s.l.), *Atmos. Chem. Phys. Discuss.*, **13**, 20419-20462, doi: 10.5194/acpd-13-20419-2013, 2013.  
<http://dx.doi.org/10.5194/acpd-13-20419-2013>
- Hassler, B., I. Petropavlovskikh, J. Staehelin, T. August, P.K. Bhartia, C. Clerbaux, D. Degenstein, M. De Mazière, B.M. Dinelli, A. Dudhia, G. Dufour, S.M. Frith, L. Froidevaux, S. Godin-Beekmann, J. Granville, N.R.P. Harris, K. Hoppel, D. Hubert, Y. Kasai, M.J. Kurylo, E. Kyrölä, J.-C. Lambert, P.F. Levelt, C.T. McElroy, R.D. McPeters, R. Munro, H. Nakajima, A. Parrish, P. Raspollini, E.E. Remsberg, K.H. Rosenlof, A. Rozanov, T. Sano, Y. Sasano, M. Shiotani, H.G.J. Smit, G. Stiller, J. Tamminen, D.W. Tarasick, J. Urban, R.J. van der A, J.P. Veefkind, C. Vigouroux, T. von Clarmann, C. von Savigny, K.A. Walker, M. Weber, J. Wild and J. Zawodny, S12N overview paper: ozone profile measurements: techniques, uncertainties and availability, *Atmos. Meas. Tech. Discuss.*, **6**, 9857-9938, doi:10.5194/amtd-6-9857-2013, 2013.  
<http://www.atmos-meas-tech-discuss.net/6/9857/2013/amtd-6-9857-2013.html>
- Henneberger, J., J.P. Fugal, O. Stetzer, U. Lohmann, HOLIMO II: a digital holographic instrument for ground-based in situ observations of microphysical properties of mixed-phase clouds, *Atmospheric Measurement Techniques*, **6**, 11, 2975-2987, doi: 10.5194/amt-6-2975-2013, 2013.  
<http://www.atmos-meas-tech.net/6/2975/2013/amt-6-2975-2013.html>
- Hess, P.G., R. Zbinden, Stratospheric impact on tropospheric ozone variability and trends: 1990-2009, *Atmospheric Chemistry and Physics*, **13**, 2, 649-674, doi: 10.5194/acp-13-649-2013, 2013.  
<http://www.atmos-chem-phys.net/13/649/2013/acp-13-649-2013.html>
- Iori, M., O. Atakisi, G. Chiodi, H. Denizli, F. Ferrarotto, M. Kaya, A. Yilmaz, L. Recchia, J. Russ, SiPM application for a detector for UHE neutrinos tested at Sphinx Station, *Nuclear Inst. and Methods in Physics Research A*, doi: 10.1016/j.nima.2013.11.076, 2013.  
<http://dx.doi.org/10.1016/j.nima.2013.11.076>
- Jurányi, Z., T. Tritscher, M. Gysel, M. Laborde, L. Gomes, G. Roberts, U. Baltensperger, E. Weingartner, Hygroscopic mixing state of urban aerosol derived from size-resolved cloud condensation nuclei measurements during the MEGAPOLI campaign in Paris, *Atmospheric Chemistry and Physics*, **13**, 13, 6431-6446, doi: 10.5194/acp-13-6431-2013, 2013.  
<http://www.atmos-chem-phys.net/13/6431/2013/acp-13-6431-2013.html>
- Krüger, M. L., S. Mertes, T. Klimach, Y. Cheng, H. Su, J. Schneider, M.O. Andreae, U. Pöschl and D. Rose, Assessment of cloud supersaturation by aerosol particle and cloud condensation nuclei (CCN) measurements, *Atmos. Meas. Tech. Discuss.*, **6**, 10021-10056, doi: 10.5194/amtd-6-10021-2013, 2013.  
<http://www.atmos-meas-tech-discuss.net/6/10021/2013/amtd-6-10021-2013.html>
- Lee, S., S. Oh, Y. Yi, Simultaneity of Forbush decrease events observed at middle-latitude neutron monitors, *Journal of Geophysical Research-Space Physics*, **118**, 2, 608-614, doi: 10.1002/jgra.50159, 2013.  
<http://onlinelibrary.wiley.com/doi/10.1002/jgra.50159/abstract;jsessionid=0CF769B6D0D7D296AB1C23F9715CF182.d01t03>
- Levin, I., B. Kromer, S. Hammer, Atmospheric  $\Delta^{14}\text{CO}_2$  trend in Western European background air from 2000 to 2012, *Tellus Series B - Chemical and Physical Meteorology*, **65**, 20092, doi: 10.3402/tellusb.v65i0.20092, 2013.  
<http://dx.doi.org/10.3402/tellusb.v65i0.20092>
- Mahieu, E., R. Zander, G.C. Toon, M.K. Vollmer, S. Reimann, J. Muhle, W. Bader, B. Bovy, B. Lejeune, C. Servais, P. Demoulin, G. Roland, P.F. Bernath, C.D. Boone, K.A. Walker, and P. Duchatelet, Spectrometric monitoring of atmospheric carbon tetrafluoride (CF<sub>4</sub>) above the Jungfraujoch station since 1989: evidence of its continued increase but at a slowing rate, *Atmos. Meas. Tech.*, **6**, 7535-7563, doi:10.5194/amtd-6-7535-2013, 2013.  
<http://www.atmos-meas-tech-discuss.net/6/7535/2013/amtd-6-7535-2013.html>

Mann, G. W., K.S. Carslaw, C.L. Reddington, K.J. Pringle, M. Schulz, A. Asmi, D.V. Spracklen, D.A. Ridley, M.T. Woodhouse, L.A. Lee, K. Zhang, S.J. Ghan, R.C. Easter, X. Liu, P. Stier, Y.H. Lee, P.J. Adams, H. Tost, J. Lelieveld, S.E. Bauer, K. Tsigaridis, T.P.C. van Noije, A. Strunk, E. Vignati, N. Bellouin, M. Dalvi, C.E. Johnson, T. Bergman, H. Kokkola, K. von Salzen, F. Yu, G. Luo, A. Petzold, J. Heintzenberg, A. Clarke, J.A. Ogren, J. Gras, U. Baltensperger, U. Kaminski, S.G. Jennings, C.D. O'Dowd, R.M. Harrison, D.C.S. Beddows, M. Kulmala, Y. Viisanen, V. Ulevicius, N. Mihalopoulos, V. Zdimal, M. Fiebig, H.-C. Hansson, E. Swietlicki and J.S. Henzig, Intercomparison and evaluation of aerosol microphysical properties among AeroCom global models of a range of complexity, *Atmos. Chem. Phys. Discuss.*, **13**, 30841-30928, doi: 10.5194/acpd-13-30841-2013, 2013.  
<http://dx.doi.org/10.5194/acpd-13-30841-2013>

Parrish, D.D., K.S. Law, J. Stachelin, R. Derwent, O.R. Cooper, H. Tanimoto, A. Volz-Thomas, S. Gilge, H.E. Scheel, M. Steinbacher, E. Chan, Lower tropospheric ozone at northern midlatitudes: Changing seasonal cycle, *Geophysical Research Letters*, **40**, 1-6, doi:10.1002/grl.50303, 2013.  
<http://onlinelibrary.wiley.com/doi/10.1002/grl.50303/abstract>

Pieterse, G., M.C. Krol, A.M. Batenburg, C.A.M. Brenninkmeijer, M.E. Popa, S. O'Doherty, A. Grant, L.P. Steele, P.B. Krummel, R.L. Langenfelds, H.J. Wang, A. Vermeulen, M. Schmidt, C. Yver, A. Jordan, A. Engel, R.E. Fisher, D. Lowry, E.G. Nisbet, S. Reimann, M.K. Vollmer, M. Steinbacher, S. Hammer, G. Forster, W.T. Sturges, T. Röckmann, Reassessing the variability in atmospheric H<sub>2</sub> using a two-way nested TM5 mode, *Journal of Geophysical Research*, **118**, 1-17, doi: 10.1002/jgrd.50204, 2013.  
<http://onlinelibrary.wiley.com/doi/10.1002/jgrd.50204/abstract>

Pinardi, G., M. Van Roozendaal, N. Abuhassan, C. Adams, A. Cede, K. Clémer, C. Fayt, U. Frieß, M. Gil, J. Herman, C. Hermans, F. Hendrick, H. Irie, A. Merlaud, M. Navarro Comas, E. Peters, A.J.M. Pijters, O. Puentedura, A. Richter, A. Schönhardt, R. Shaiganfar, E. Spinei, K. Strong, H. Takashima, M. Vrekoussis, T. Wagner, F. Wittrock and S. Yilmaz, MAX-DOAS formaldehyde slant column measurements during CINDI: intercomparison and analysis improvement, *Atmos. Meas. Tech.*, **6**, 167-185, doi:10.5194/amt-6-167-2013, 2013.  
<http://www.atmos-meas-tech.net/6/167/2013/amt-6-167-2013.html>

Pommereau, J.-P., F. Goutail, F. Lefèvre, A. Pazmino, C. Adams, V. Dorokhov, P. Eriksen, R. Kivi, K. Stebel, X. Zhao, M. Van Roozendaal, Why unprecedented ozone loss in the Arctic in 2011? Is it related to climatic change?, *Atmos. Chem. Phys.*, **13**, 5299-5308, doi:10.5194/acp-13-5299-2013, 2013.  
<http://www.atmos-chem-phys.net/13/5299/2013/acp-13-5299-2013.html>

Rose, D., S.S. Gunthe, Z. Jurányi, M. Gysel, G.P. Frank, J. Schneider, J. Curtius and U. Pöschl, Size-resolved and integral measurements of cloud condensation nuclei (CCN) at the high-alpine site Jungfrauoch, *Atmos. Chem. Phys. Discuss.*, **13**, 32575-32624, doi: 10.5194/acpd-13-32575-2013, 2013.  
<http://www.atmos-chem-phys-discuss.net/13/32575/2013/acpd-13-32575-2013.html>

Santachiara, G., F. Prodi, F. Belosi, Atmospheric aerosol scavenging processes and the role of thermo- and diffusio-phoretic forces, *Atmospheric Research*, **128**, 46-56, doi: 10.1016/j.atmosres.2013.03.004, 2013.  
<http://www.sciencedirect.com/science/article/pii/S0169809513000884>

Siebenmann, C., H. Sorensen, R.A. Jacobs, T. Haider, P. Rasmussen, C. Lundby, Hypocapnia during hypoxic exercise and its impact on cerebral oxygenation, ventilation and maximal whole body O<sub>2</sub> uptake, *Respiratory Physiology & Neurobiology*, **185**, 461-467, doi: 10.1016/j.resp.2012.08.012, 2013.  
<http://dx.doi.org/10.1016/j.resp.2012.08.012>

Sofieva, V. F., N. Rähpö, J. Tamminen, E. Kyrölä, N. Kalakoski, M. Weber, A. Rozanov, C. von Savigny, A. Laeng, T. von Clarmann, G. Stiller, S. Lossow, D. Degenstein, A. Bourassa, C. Adams, C. Roth, N. Lloyd, P. Bernath, R.J. Hargreaves, J. Urban, D. Murtagh, A. Hauchecorne, F. Dalaudier, M. Van Roozendaal, N. Kalb and C. Zehner, Harmonized dataset of ozone profiles from satellite limb and occultation measurements, *Earth Syst. Sci. Data*, **5**, 349-363, doi:10.5194/essd-5-349-2013, 2013.  
<http://www.earth-syst-sci-data.net/5/349/2013/essd-5-349-2013.html>

Sturm, P., B. Tuzson, S. Henne, L. Emmenegger, Tracking isotopic signatures of CO<sub>2</sub> at the high altitude site Jungfrauoch with laser spectroscopy: analytical improvements and representative results, *Atmospheric Measurement Techniques*, **6**, 7, 1659-1671, doi: 10.5194/amt-6-1659-2013, 2013.  
<http://www.atmos-meas-tech.net/6/issue7.html>

Tuzson, B., K. Zeyer, M. Steinbacher, J.B. McManus, D.D. Nelson, M.S. Zahniser, L. Emmenegger, Selective measurements of NO, NO<sub>2</sub> and NO<sub>y</sub> in the free troposphere using quantum cascade laser spectroscopy, *Atmospheric Measurement Techniques*, **6**, 4, 927-936, doi: 10.5194/amt-6-927-2013, 2013.  
<http://www.atmos-meas-tech.net/6/927/2013/amt-6-927-2013.html>

Van der Laan-Luijkx, I.T., S. van der Laan, C. Uglietti, M.F. Schibig, R.E.M. Neubert, H.A.J. Meijer, W.A. Brand, A. Jordan, J.M. Richter, M. Rothe, M.C. Leuenberger, Atmospheric CO<sub>2</sub>, delta (O-2/N-2) and delta (CO<sub>2</sub>)-C-13 measurements at Jungfrauoch, Switzerland: results from a flask sampling intercomparison program, *Atmospheric Measurement Techniques*, **6**, 7, 1805-1815, doi: 10.5194/amt-6-1805-2013, 2013.  
<http://dx.doi.org/10.5194/amt-6-1805-2013>

Visser, A., H.P. Broers, R. Purtschert, J. Sültenfuss, M. de Jonge, Groundwater age distributions at a public drinking water supply well field derived from multiple age tracers (<sup>85</sup>Kr, <sup>3</sup>H/<sup>3</sup>He, noble gases and <sup>39</sup>Ar), *Water Resources Research*, **49**, 7778-7796, doi: 10.1002/2013WR014012, 2013.  
<http://onlinelibrary.wiley.com/doi/10.1002/2013WR014012/abstract>

Wacker, S., J. Gröbner and L. Vuilleumier, A method to calculate cloud-free long-wave irradiance at the surface based on radiative transfer modeling and temperature lapse rate estimates, *Theoretical and Applied Climatology*, **115**, 551-561, doi: 10.1007/s00704-013-0901-5, 2013.  
<http://dx.doi.org/10.1007/s00704-013-0901-5>

Weaver, C.J., C. Kiemle, S.R. Kawa, T. Aalto, J. Necki, M. Steinbacher, J. Arduini, F. Apadula, H. Berkhout, J. Hatakka, S. O'Doherty, Retrieval of methane source strengths in Europe using a simple modeling approach to assess the potential of space-borne lidar observations, *Atmospheric Chemistry and Physics Discussions*, **13**, 19559-19582, doi:10.5194/acpd-13-19559-2013, 2013.  
<http://www.atmos-chem-phys-discuss.net/13/19559/2013/acpd-13-19559-2013.html>

Xia, Y., F. Conen, C. Alewell, Total bacterial number concentration in free tropospheric air above the Alps, *Aerobiologia*, **29**, 1, 153-159, doi: 10.1007/s10453-012-9259-x, 2013.  
<http://link.springer.com/article/10.1007%2Fs10453-012-9259-x>

Zieger, P., R. Schmidhauser, E. Weingartner, U. Baltensperger, Effects of relative humidity on aerosol light scattering: results from different European sites, *Atmospheric Chemistry and Physics*, **13**, 21, 10609-10631, doi: 10.5194/acp-13-10609-2013, 2013.  
<http://www.atmos-chem-phys.net/13/10609/2013>

### Theses

Henneberger, J., Mountain-top in-situ observations of mixed-phase clouds with a digital holographic instrument, PhD thesis, ETH Zurich, 2013.

Keller, M., Mastering Imperfect and Partial Information in Wireless Sensing Systems, PhD Thesis, ETH Zurich, September, 2013.  
[ftp://ftp.tik.ee.ethz.ch/pub/people/kellmatt/diss\\_keller.pdf](ftp://ftp.tik.ee.ethz.ch/pub/people/kellmatt/diss_keller.pdf)

Lauber, A., Statistical analysis of ice particle habits observed in clouds at the High Altitude Research Station Jungfraujoch, Bachelor Thesis, Karlsruhe Institute of Technology (KIT), November, 2013.

Von Grünigen M., Analysis of Sub-Millimeter Spectra from STEAMR Breadboard Receiver, MSc Thesis, Institut für angewandte Physik, Universität Bern, September, 2013.

### Conference presentations / Posters

Argandoña, E.G., H. Bengoetxea, S. Bulnes, R. Ledezma, N. Ortuzar, I. Rico-Barrio, J.V. Lafuente, Environmental enrichment reverts the cognitive effects of altitude hypoxia inducing changes at the neurogliovascular unit, Annual Meeting of the Swiss Society of Neuroscience, Geneva, Switzerland, February 2, 2013.

Argandoña, E.G., S. Marathe, L. Alberi, Environmental enrichment reverts the cognitive effects of altitude hypoxia, 75th Annual Meeting of the Swiss Society for Anatomy, Histology, and Embryology, Fribourg, Switzerland, September 6, 2013.

Argandoña, E.G., S. Marathe, L. Alberi, Environmental enrichment reverts the cognitive effects of altitude hypoxia, Neurogune 2013, Basque Neuroscience Meeting, Bilbao, Spain, July 8, 2013.

Bader, W., E. Mahieu, B. Bovy, B. Lejeune, P. Demoulin, C. Servais, and J.J. Harrison, Evolution of methanol (CH<sub>3</sub>OH) above the Jungfraujoch station (46.5°N): variability, seasonal modulation and long-term trend, poster presentation at the "EGU 2013 General Assembly", Vienna, Austria, April 07-12, 2013.  
<http://hdl.handle.net/2268/145478>

Berchet, A., I. Pison, F. Chevallier, P. Bousquet, S. Conil, M. Geever, T. Laurila, J.V. Lavric, M. Lopez, J. Moncrieff, J. Necki, M. Ramonet, M. Schmidt, M. Steinbacher, J. Tarniewicz, Optimized atmospheric inversion for methane flux quantification in Eurasia, EGU General Assembly, Geophysical Research Abstracts, **15**, EGU2013-8488, Vienna, Austria, April 07-12, 2013.

Bianchi F., H. Junninen, J. Troestl, J. Duplissy, L. Rondo, M. Simon, A. Kuerten, A. Adamov, J. Curtius, J. Dommen, E. Weingartner, D. Worsnop, M. Kulmala, and U. Baltensperger, Particle nucleation events at the high alpine station Jungfraujoch, 19th International Conference on Nucleation and Atmospheric Aerosols, Fort Collins, Colorado, USA, June 23-28, 2013.

Bütikofer, R., E.O. Flückiger, Y. Balabin and A. Belov, The reliability of GLE analysis based on neutron monitor data – a critical review, Conference Proceedings, 33rd International Cosmic Ray Conference, Rio de Janeiro, Brazil, 2013.

Bütikofer, R., E.O. Flückiger, Differences in published characteristics of GLE60 and their consequences on computed radiation dose rates along selected flight paths, 23<sup>rd</sup> European Cosmic Ray Symposium (and 32<sup>nd</sup> Russian Cosmic Ray Conference), J. Phys. Conf. Ser., **409**, 012166, doi: 10.1088/1742-6596/409/1/012166, Moscow, Russia, 2013.  
<http://iopscience.iop.org/1742-6596/409/1/012166>

Conen, F., Aérosol: interaction des poussières du sol avec l'atmosphère au delà de leur composition minérale, Proc. Colloque National 'Microbiologie des Aérosols', Institut de Chimie de Clermont-Ferrand, La Bourboule, France, October 7-9, 2013.

Emmenegger, L., B. Tuzson, P. Sturm, M. Mangold, and S. Henne, Four years of laser based  $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$ -CO<sub>2</sub> monitoring in the free troposphere, European Geophysical Union (EGU), Vienna, Austria, April 07-12, 2013.

Emmenegger, L., B. Tuzson, P. Sturm, M. Mangold, and S. Henne, Tracking stable CO<sub>2</sub> isotopes with QCL spectroscopy at Jungfraujoch, Goldschmidt 2013, Florence, Italy, August 25-30, 2013.

Emmenegger, L., B. Tuzson, P. Sturm, M. Mangold, and S. Henne, Recent advances in QC laser spectroscopy for ambient air monitoring, International Conference on THz and Mid Infrared Radiation and Applications to Cancer Detection Using Laser Imaging, Sheffield, UK, October 10-11, 2013.

Franco, B., E. Mahieu, M. Van Roozendaal, F. Hendrick, T. Stavrakou, I. De Smedt, G. Pinardi, B. Bovy, P. Demoulin, and C. Servais, Parallel measurements of formaldehyde (H<sub>2</sub>CO) at the Jungfraujoch station: preliminary FTIR results and first comparison with MAX-DOAS data, oral presentation at the NORS second progress meeting, Uccle, Belgium, October 17, 2013.  
<http://hdl.handle.net/2268/158375>

Fröhlich, R., M.J. Cubison, J. Slowik, A.S.H. Prévôt, U. Baltensperger, J.R. Kimmel, M. Gonin, U. Rohner, D.R. Worsnop, J.T. Jayne, Year-round measurement of pm<sub>1</sub> chemical composition in the Swiss Alps using a Time-of-Flight Aerosol Chemical Speciation Monitor (ToF-ACSM), European Aerosol Conference (EAC), Prague, Czech Republic, September 2-6, 2013.

Fröhlich, R., Coordinated ACSM measurements in the framework of ACTRIS (+ source apportionment), 3rd ACTRIS WP3 Workshop, Athens, Greece, October 7-11, 2013.

Fröhlich, R., J. Slowik, A.S.H. Prévôt, U. Baltensperger, Q-ACSM on the Jungfraujoch 13.06.12-14.11.12, 14th EMEP Task Force on Measurements and Modelling (TFMM), Zagreb, Croatia, May 5-8, 2013.

Greif R., S. Nabecker, M. Kotarlic, C. Riggerbach, M. Kleine-Brüggeney, P. Schoettker, L. Theiler, Performance of videolaryngoscopes under extreme daylight condition outdoors: a manikin study on a Swiss glacier, DAS Annual Meeting, Ascot, United Kingdom, November, 2013.

Gysel, M., M. Laborde, N. Bukowiecki, E. Hammer, P. Zieger, U. Baltensperger and E. Weingartner, Influence of vertical transport on the mixing state of black carbon at the high-alpine Jungfraujoch site, EAC, Prague, Czech Republic, 2013.

Haberkmorn A., M. Phillips, R. Kenner, M.-O. Schmid, Influences of snow cover on thermal processes in steep alpine rockwalls, Proceedings of the Davos Atmosphere and Cryosphere Assembly DACA-13, p. 868, Davos, Switzerland, July 8-12, 2013.

Haberkmorn A., M. Phillips, M. Hoelzle, R. Kenner, Influences of the seasonal varying snow cover on thermal processes in steep Alpine permafrost rock walls, Swiss Geoscience Meeting, Lausanne, Switzerland, November 15-16, 2013.

Hammer, E., C. R. Hoyle, B. P. Luo, M. Gysel, N. Bukowiecki, U. Lohmann, R. Vogt, C. Marcolli, T. Peter, U. Baltensperger, E. Weingartner, Numerical studies of aerosol activation behaviour in warm clouds compared to in-situ measurements at the high-alpine site Jungfraujoch, EAC, Prague, Czech Republic, 2013.

Hammer, E., C.R. Hoyle, B.P. Luo, M. Gysel, N. Bukowiecki, U. Lohmann, R. Vogt, C. Marcolli, T. Peter, U. Baltensperger and E. Weingartner, Numerical studies of aerosol activation behaviour in warm clouds compared to in-situ measurements at the high-alpine site Jungfraujoch, Daca-13, Davos, Switzerland, 2013.

Heinzer R., J. Saugy, N. Tobback, T. Rupp, J. Haba-Rubio, G.P. Millet, Effects of Real vs Simulated Altitude on Sleep and Sleep Disordered Breathing, 5th World Congress on Sleep Medicine, Valencia, Spain, Sept 28 – Oct 2, 2013.

Henne, S., M. Steinbacher, E. Mahieu, W. Bader, T. Blumenstock, E. Cuevas-Agulló, D. Brunner, B. Buchmann, Comparison of ground-based remote sensing and in-situ observations of CO, CH<sub>4</sub> and O<sub>3</sub>, accounting for representativeness uncertainty, EGU General Assembly, Geophysical Research Abstracts, **15**, EGU2013-9228, Vienna, Austria, April 07-12, 2013.

Henneberger J., O. Stetzer and U. Lohmann, In-situ measurements of the microphysical properties of mixed-phase clouds with a digital holographic instrument, DACA-13 conference, Davos, Switzerland, 2013.

Hinz, K.-P., A. Fendt and B. Spengler, Instrumental optimization of the compact laser mass spectrometer LAMPAS 3 for on-line single particle analysis under various field conditions, European Aerosol Conference 2013, Prague, Czech Republic, September 01-06, 2013.

Hoerger, C.C. et al., ACTRIS Inter-laboratory comparison of VOCs in Europe: measurements of synthetic mixture and ambient air from pressurized cylinders, EGU, Vienna, Austria, April 9, 2013.

Iori, M. et al, Tests for a new concept of EAS detector for UHE neutrinos, 23<sup>rd</sup> European Cosmic Ray Symposium (and 32<sup>nd</sup> Russian Cosmic Ray Conference), Journal of Physics: Conference Series, **409**, doi: 10.1088/1742-6596/409/1/012131, Moscow, Russia, 2013.

<http://iopscience.iop.org/1742-6596/409/1/012131>

- Kolonjari, F., K.A. Walker, E. Mahieu, R.L. Batchelor, P.F. Bernath, C.D. Boone, S. Conway, L. Dan, D. Griffin, A. Harrett, Y. Kasai, A. Kagawa, R. Lindenmaier, K. Strong, and C. Whaley, Validation of ACE-FTS measurements of CFC-11, CFC-12 and HCFC-22 using ground-based FTIRs, poster presentation at the “AGU Fall Meeting 2013”, San Francisco, CA, USA, December 09-13, 2013.
- Kupiszewski, P., E. Weingartner, R. Färber, M. Gysel, E. Hammer, C. Fuchs, U. Baltensperger, P. Vochezer, M. Schnaiter, C. Linke, E. Toprak, S. Mertes, J. Schneider, T. Klimach, S. Schmidt, CLACE 2013: Cloud microphysics and physico-chemical characterization of ice residuals in mixed-phase clouds, European Aerosol Conference, Prague, Czech Republic, Sept. 1-6, 2013.
- Kupiszewski, P., E. Weingartner, R. Färber, M. Gysel, E. Hammer, C. Fuchs, U. Baltensperger, P. Vochezer, M. Schnaiter, J. Schneider, T. Klimach, S. Schmidt, Physical and chemical characteristics of ice residuals: CLACE 2013, Swiss Global Change Day, Bern, Switzerland, 2013.
- Leuenberger, M., M. Steinbacher, B. Buchmann, I. van der Laan-Luijx, S. van der Laan, M. Schibig, P. Nyfeler, Comparison of continuous in-situ CO<sub>2</sub> observations at Jungfraujoch using two different measurement techniques, 9th International Carbon Dioxide Conference, Beijing, China, June 03-07, 2013.
- Leuenberger M., I. van der Laan-Luijx, S. van der Laan, M. Schibig and P. Nyfeler, Combined CO<sub>2</sub> and O<sub>2</sub> measurements at the High Altitude Research Station Jungfraujoch, Switzerland, 9<sup>th</sup> CO<sub>2</sub> conference, Beijing, China, June 03-07, 2013.
- Leuenberger, M., M. Steinbacher, B. Buchmann, I. van der Laan-Luijx, S. van der Laan, M. Schibig, P. Nyfeler, Comparison of continuous in-situ CO<sub>2</sub> observations at Jungfraujoch, Switzerland using two different measurement techniques, 17th WMO/IAEA Meeting on Carbon Dioxide, other Greenhouse Gases and Related Measurement Techniques (GGMT-2013), Beijing, China, June 10-14, 2013.
- Leuenberger M., I. van der Laan-Luijx, S. van der Laan, M. Schibig and P. Nyfeler, Combined CO<sub>2</sub> and O<sub>2</sub> measurements at the High Altitude Research Station Jungfraujoch, Switzerland, 17th WMO/IAEA Meeting of Experts on Carbon Dioxide, Other Greenhouse Gases, and Related Tracer Measurement Techniques, Beijing, China, June 10-14, 2013.
- Mahieu, E., B. Bovy, W. Bader, P. Demoulin, B. Franco, B. Lejeune, C. Servais, and C. Vigouroux, Overview of the geophysical data derived from long-term FTIR monitoring at the Jungfraujoch NDACC site (46.5°N), poster presented at the 6<sup>th</sup> International GEOS-Chem Meeting, Harvard University, Cambridge, MA, USA, May 6-9, 2013.  
<http://hdl.handle.net/2268/147824>
- Mahieu, E., S. O’Doherty, S. Reimann, M. Vollmer, W. Bader, B. Bovy, B. Lejeune, P. Demoulin, G. Roland, C. Servais, and R. Zander, First retrievals of HCFC-142b from ground-based high-resolution FTIR solar observations: application to high-altitude Jungfraujoch spectra, poster presentation at the “EGU 2013 General Assembly”, Vienna, Austria, April 07-12, 2013.  
<http://hdl.handle.net/2268/144709>
- Muntwyler U. et al., Has Europe a need for solar plants in Africa?, Proceedings 8<sup>th</sup> International Conference and Exhibitions on Ecological Vehicles and Renewable Energies, Grimaldi Forum, Monaco, March, 2013.
- Muntwyler U. et al., Does Europe need solar plants in the Sahara?, Proceedings 28<sup>th</sup> EUPVSEC 2013 conference, Paris, France, September, 2013.
- Reimann, S. et al., Re-evaluation of the lifetimes of ozone-depleting substances and related trace gases, EGU, Vienna, Austria, April 9, 2013.
- Renker M., A. Murk, M. von Gruenigen, A. Emrich, U. Frisk, Atmospheric Observations and Laboratory Measurements of a broadband 340 GHz Receiver System for STEAMR, URSI Microwave Signatures Conference, Helsinki, Finland, October 30, 2013.
- Schenk, L., S. Mertes, S. Schmidt, J. Schneider, B. Nillius, F. Frank and F. Stratmann, Composition analysis of ice nuclei and ice particle residuals combining aerosol mass spectrometry and counterflow virtual impactor technique, INUIT Summer School on ‘Atmospheric Ice Nucleation and its Implications’, Braunfels, Germany, September 15-22, 2013.
- Schlenczek, O., In-situ-Messungen von Hydrometeoren mit Hilfe eines holografischen Instruments, 8<sup>th</sup> Extremwetterkongress, Hamburg, Germany, September 23-27, 2013.  
<http://extremwetterkongress.de/abstracts/oliver-schlenczek/>
- Schmidt, S., J. Schneider, T. Klimach, S. Mertes, L. Schenk, U. Kästner, F. Stratmann, J. Curtius, P. Kupiszewski, E. Weingartner, E. Hammer, P. Vochezer, M. Schnaiter, and S. Borrmann, In-situ single particle composition analysis of ice residuals in mixed-phase clouds during INUIT-JFJ 2013, European Aerosol Conference, Prague, Czech Republic, Sept. 1-6, 2013.
- Steinbacher, M., ICOS country report – Switzerland, Integrated Carbon Observation System (ICOS) Atmosphere Monitoring Station Assembly, Paris, France, November 13, 2013.
- Steinbacher, M., E. Weingartner, M. Leuenberger, B. Buchmann, The Global GAW Station Jungfraujoch – Measurement Programme & Selected Results, GAW 2013 Symposium, Geneva, Switzerland, March 18-20, 2013.

- Steinbacher, M., C. Zellweger, L. Emmenegger, B. Buchmann, Long-term field intercomparison of N<sub>2</sub>O observations with GC-ECD and Cavity Enhanced Absorption Spectroscopy at Jungfrauoch, 17th WMO/IAEA Meeting on Carbon Dioxide, Other Greenhouse Gases, and Related Measurement Techniques (GGMT-2013), Beijing, China, June 10-14, 2013.
- Steinbacher, M., C. Zellweger, B. Buchmann, The Swiss contribution to quality assurance within the GAW monitoring network, International Workshop on the Global Atmospheric Watch (GAW) Activity, Jakarta, Indonesia, September 11-12, 2013.
- Stopelli, E., F. Conen, C. Alewell, C.E. Morris, Abundance of biological ice nuclei at tropospheric cloud heights: results and perspectives from one year of observations, Proc. Colloque National 'Microbiologie des Aérosols', Institut de Chimie de Clermont-Ferrand, La Bourboule, France, October 7-9, 2013.
- Tröstl J., J. Duplissy, F. Bianchi, L. Rondo, H. Junninen, A. Adamov, A.P. Praplan, C. Fuchs, J. Dommen, E. Weingartner and U. Baltensperger, Formation and chemical properties of nano-sized particles in the lower free troposphere, European aerosol conference, Prague, Czech Republic, September 1-6, 2013.
- Tuzson, B., P. Sturm, S. Henne, and L. Emmenegger, Mid-IR quantum cascade laser based spectrometer for isotope ratio measurements of tropospheric CO<sub>2</sub>, 41<sup>st</sup> Freiburg Infrared Colloquium, Freiburg, Germany, February 26-27, 2013.
- Tuzson, B., M. Mangold, P. Sturm, S. Henne, H. Looser, Y. Bonetti, J. Faist, and L. Emmenegger, Frontiers of isotope ratio measurements and the first analyzers fully based on QC technology, Mid-Infrared Coherent Sources (MICS), Paris, France, October 27-November 02, 2013.
- Vigouroux, C., M. De Mazière, P. Demoulin, C. Servais, F. Hase, T. Blumenstock, M. Schneider, R. Kohlhepp, S. Barthlott, O. Garcia, J. Mellqvist, G. Persson, M. Palm, J. Notholt, J. Hannigan, and M. Coffey, Ozone tropospheric and stratospheric trends (1995-2012) at six ground-based FTIR stations (28°N to 79°N), poster presentation at the "EGU 2013 General Assembly", Vienna, Austria, April 07-12, 2013.
- Vochezer, P., M. Schnaiter, P. Kupiszewski, E. Weingartner, Investigating mixed phase cloud ice particles, INUIT Summer School, Braunfels, Germany, 2013.
- Vochezer, P., M. Schnaiter, A. Abdelmonem, P. Kupiszewski, E. Weingartner, T. Leisner, In situ characterization of cloud ice particles at the AIDA cloud chamber and Jungfrauoch, Davos Atmosphere and Cryosphere Assembly, Davos, Switzerland, 2013.
- Vochezer, P., M. Schnaiter, A. Abdelmonem, P. Kupiszewski, E. Weingartner, T. Leisner, In situ characterization of cloud ice particles, German Physical Society Spring Meeting, Jena, Germany, 2013.
- Vollmer, M.K. et al., Atmospheric histories and global emissions of the halons H-1211, H-1301, and H-2402, 47th AGAGE meeting, Seogwipo, Jeju, Korea, May 13, 2013.
- Vollmer, M.K. et al., New compounds in the atmosphere, InGOS meeting, Bremen, Germany, March 12, 2013.
- Wacker, S., J. Gröbner and L. Vuilleumier, Trends in surface radiation and cloud radiative effect over Switzerland in the past 15 years, AIP Conference Proceedings, Cahalan, R. F. & Fischer, J. (ed.), AIP, **1531**, 672-675, Dahlem Cube, Free University, Berlin, Germany, August 6-10, 2012, 2013.  
<http://dx.doi.org/10.1063/1.4804859>
- Weingartner, E., P. Kupiszewski, A. Bigi, U. Baltensperger, P. Vochezer, M. Schnaiter, Design of an ice selective inlet for the characterization of ice in mixed-phase clouds, Daka-13, Davos, Switzerland, 2013.
- Yilmaz, A., H. Denizli, M. Iori, F. Ferrarotto, J. Russ, O. Atakisi and M. Kaya, SiPM application for a detector for UHE neutrinos tested at Sphinx Station, International Conference on AstroParticle Physics, Rome, Italy, May 22-24, 2013.

### Books / Edited Books

- Mahieu, E., R. Zander, P.F. Bernath, C.D. Boone, and K.A. Walker, Recent trend anomaly of hydrogen chloride (HCl) at northern mid-latitudes derived from Jungfrauoch, HALOE and ACE-FTS infrared solar observations, in *The Atmospheric Chemistry Experiment ACE at 10: A Solar Occultation Anthology*, P.F. Bernath (Ed.), ISBN 978-0-937194-54-9, A. Deepak Publishing, 239-249, 2013.

### Popular publications and presentations

- Bütikofer, R., E. Flückiger et al., NMDB - the Database of Real-Time Neutron Monitor Measurements: An Excellent Cornerstone for Space Weather Applications, Vortrag an der 10<sup>th</sup> European Space Weather Week ESWW10, Antwerpen, Belgien, November 18-22, 2013.
- Flückiger E., Forschungsstation Jungfrauoch – Atmosphärenforschung in Europas höchstgelegenen Laboratorium für Umweltwissenschaften, Mitt. Natforsch. Ges. Bern, NF 70, Bd., Seiten 67-69, Bern, June, 2013.
- Flückiger, E., "International Foundation High Altitude Research Stations Jungfrauoch und Gornergrat (HFSJG)", Vortrag, 21<sup>st</sup> ESA Symposium on European Rocket and Balloon Programmes and Related Research, Thun, Switzerland, June 9-13, 2013.

Flückiger E., Cosmic Rays - Fundamentals and Space Weather Effects, eingeladener Vortrag am Joint Space Weather Summer Camp 2013, DLR Deutsches Zentrum für Luft- und Raumfahrt e.V., Neustrelitz, Deutschland, August 14, 2013.

Erwin Flückiger, Kosmische Strahlung - 100 Jahre Forschung, Wissen, Rätsel, eingeladener Vortrag bei der Astronomischen Gesellschaft Bern, August 27, 2013.

Flückiger E. und R. Bütikofer, Energetic solar cosmic ray events and their effect on radiation exposure at flight altitudes, eingeladener Vortrag an der 10<sup>th</sup> European Space Weather Week ESWW10, Antwerpen, Belgien, November 18-22, 2013.

Schnee, Gletscher und Permafrost 2011/2012 (Snow, Glaciers and Permafrost 2011/2012), Die Alpen/Les Alpes, 7/2013, 52-59, 2013.

Zieger, P., Astrofotografie auf dem Jungfrauoch: Hier oben ist man den Sternen näher, Orion, **377**, 4, 38-40, 2013.

### **Data books and reports**

BAFU 2013: NABEL – Luftbelastung 2012. Messresultate des Nationalen Beobachtungsnetzes für Luftfremdstoffe (NABEL). pp. 128, Bundesamt für Umwelt, Bern. Umwelt-Zustand Nr. 1324, 2013.

Leuenberger M., S. van der Laan, I.T. van der Laan-Luijkx, M.F. Schibig, Comparison of continuous in-situ CO<sub>2</sub> observations at Jungfrauoch using two different measurement techniques, Fourth GCOS interim report, 2013.

Leuenberger M., Jahresbericht 2013 für kombinierte CO<sub>2</sub>- O<sub>2</sub> Messungen auf dem Jungfrauoch zuhanden Swiss GCOS office, 2013.

Leuenberger M, WMO World Data Centre for Greenhouse Gases, c/o Japan Meteorological Agency 1-3-4, Otemachi, Chiyoda-kuTokyo 100-8122, Japan, CO<sub>2</sub> Data from Jungfrauoch, 2013 (downloaded 182 times from 1.3.2011 to 29.2.2012).

Mertes, S., Composition analysis of ice particle residuals combining aerosol mass spectrometry and counterflow virtual impactor technique, INUIT-RP2-TROPOS, activity report, ACTRIS Trans National Access, 2013.

Mertes, S., Investigation of ice particle and cloud drop residues using the counterflow virtual impactor technique onboard HALO (HALO-CVI), final report, German Research Foundation DFG, grant ME 3534/1-2, 2013.

Murk A., M. Whale, M. Renker, STEAMR Focal Plane Array Optics: Executive Summary, IAP Research Report, No. 2013-05-MW, Institut für angewandte Physik, Universität Bern, 2013.

PERMOS 2013. Permafrost in Switzerland 2008/2009 and 2009/2010, Noetzli J. (ed.), Glaciological Report (Permafrost) No. 10/11 of the Cryospheric Commission of the Swiss Academy of Sciences, 80p., 2013.