Partikelchemie 2009

Publikationen
Diplomarbeiten
Dissertationen

Publikationen

Borrmann, S., D. Kunkel, R. Weigel, A. Minikin, T. Deshler, J. C. Wilson, J. Curtius, N. M. Sitnikov, F. Ravegnani, K. A. Law, F. Cairo, Aerosols in the tropical and subtropical UT/LS: In-situ measurements of ultrafine particle abundance and volatility, Atmos. Chem. Phys. Discuss, Ms-No.acp-2009-639, 9, 24587-24628, 2009.

Berg T., Marosits E., Maul J., Schönhense G., Hoppe P., Ott U., and Palme H. (2009) Evidence for nebular condensation of sub-micron refractory metal alloys. *Lunar Planet Sci.* **40**, abstract #1585 (CD-ROM).

Berg T., Maul J., Schönhense G., Marosits E., Hoppe P., Ott U., and Palme H. (2009) Direct evidence for condensation in the early solar system and implications for nebular cooling rates. *Astrophys. J.* **702**, L172-L176.

Busemann H., Nguyen A. N., Cody G. D., Hoppe P., Kilcoyne A. L. D., Stroud R. M., Zega T. J., and Nittler L. R. (2009) Ultra-primitive Interplanetary Dust Particles from the Comet 26P/Grigg-Skjellerup Dust Stream Collection. *Earth Planet. Sci. Lett.* **288**, 44-57.

Chen, Q., D.K. Farmer, J. Schneider, S.R. Zorn, C.L. Heald, T.G. Karl, A. Guenther, J.D. Allan, N. Robinson, H. Coe, J.R. Kimmel, T. Pauliquevis, S. Borrmann, U. Pöschl, M.O. Andreae, P. Artaxo, J.L. Jimenez, and S.T. Martin, Mass Spectral Characterization of Submicron Biogenic Organic Particles in the Amazon Basin, *Geophys. Res. Lett.*, 36, L20806, doi:10.1029/2009GL039880, 2009.

Cziczo, D. J., O. Stetzer, A. Worringen, M. Ebert, S. Weinbruch, M. Kamphus, S. J. Gallavardin, J. Curtius, S. Borrmann, K. D. Froyd, S. Mertes, O. Möhler, U. Lohmann, Inadvertent climate modification due to anthropogenic lead, Nature Geoscience, 2, 333 – 336, 2009.

De Reus, M., S. Borrmann, A. Bansemer, W. Frey, A. J. Heymsfield, C. Schiller, H. J. Vössing, G. Shur, N. M. Sitnikov, Evidence for ice particles from In-situ measurements in the tropical stratosphere, Atmos. Chem. Phys., 9, 6775–6792, 2009.

Diehl, K., M. Ettner-Mahl, A. Hannemann, and S.K. Mitra, 2009: Homogeneous freezing of single sulfuric and nitric acid solution drops levitated in an acoustic trap. Atm. Res., 94, 356-361, doi:10.1016/j.atmosres.2009.06.001.

Drewnick, F., S. S. Hings, M. R. Alfarra, A. S. H. Prévôt, S. Borrmann, Characterization of Aerodyne Aerosol Mass Spectrometer Detection Limits, Atmos. Meas. Tech., 2, 33-46, 2009.

Flores, M., Trainic, M., S. Borrmann, Y. Rudich, Effective broadband refractive index retrieval by a white light optical particle counter, PCCP themed issue: Physical chemistry of aerosols, Phys. Chem. Chem. Phys., 11, 7943-7950, DOI:10.1039/B905292E, 2009.

Frey, W., M. de Reus, H. Eichler, R. Maser, M. Wendisch, S. Borrmann, A new tandem platform AIRTOSS for airborne cloud physics and radiation measurements, Atmos. Meas. Tech., 2, 147-158, 2009.

Gail H.-P., Zhukovska S. V., Hoppe P., and Trieloff M. (2009) Stardust from AGB stars. *Astrophys. J.* **698**, 1136-1154.

Gioda, A., Mayol-Bracero, O. L., Morales-García, F., Collett, J., Decesari, S., Emblico, L., Facchini, M. C., Morales-De Jesús, R. J., Mertes, S., Borrmann, S., Walter, S., Schneider, J.: Chemical composition of cloud water in the Puerto Rican tropical trade winds, *Water Air Soil Pollut, 200 , 3-14, 2009.* doi: 10.1007/s11270-008-9888-4.

Halm H., Musat N, Lam P., Langlois R., Musat F., Peduzzi S., Lavik G., Schubert C. J., Sinha B. W., LaRoche J. and Kuypers M. M. M. (2009) Co-occurrence of denitrification and nitrogen fixation in a meromictic lake, Lake Cadagno (Switzerland). *Environmental Microbiology* **11**, 1945-1958.

Heck P. R., Amari S., Hoppe P., Baur H., Lewis R. S., and Wieler R. (2009) Ne isotopes in individual presolar graphite grains from the Murchison meteorite together with He, C, O, Mg-Al isotopic analyses as tracers of their origins. *Astrophys. J.* **701**, 1415-1425.

Holzapfel C., Soldera F., Vollmer C., Hoppe P., Mücklich F. (2009) TEM foil preparation of sub-micrometre sized individual grains by focused ion beam technique. *Journal of Microscopy* **235**, 59–66.

Hoppe P., Leitner J., Meyer B. S., The L.-S., Lugaro M., and Amari S. (2009) SiC grains from supernovae and the solar Si-isotopic ratios. *Geochim. Cosmochim. Acta* **73**, A548.

Hoppe P. (2009) Meteorites, In Landolt-Boernstein, Volume Astronomy, Astrophysics, Cosmology, subvolume B (ed. J. Trümper), Springer, pp. 450-466.

Hoppe P., Leitner J., Meyer B. S., The L.-S., Lugaro M., and Amari S. (2009) An unusual presolar silicon carbide grain from a supernova: Implications for the production of silicon-29 in type II supernovae. *Astrophys. J.* **691**, L20-L23.

Hoppe P., Huth J., and Ott U. (2009) NanoSIMS studies of presolar graphite grains: Are C-isotopic ratios grain-size-dependent? *Lunar Planet Sci.* **40**, abstract #1010 (CD-ROM).

Hoppe P., Leitner J., Vollmer C., Gröner E., Heck P. R., Gallino R., and Amari S. (2009) Heavy element abundances in presolar silicon carbide grains from low-metallicity AGB stars. *PASA* **26**, 284-288.

Jimenez, J.L., M.R. Canagaratna, N.M. Donahue, A.S.H. Prevot, Q. Zhang, J.H. Kroll, P.F. DeCarlo, J.D. Allan, H. Coe, N.L. Ng, A.C. Aiken, K.D. Docherty, I.M. Ulbrich, A.P. Grieshop, A.L. Robinson, J. Duplissy, J. D. Smith, K.R. Wilson, V.A. Lanz, C. Hueglin, Y.L. Sun, J. Tian, A. Laaksonen, T. Raatikainen, J. Rautiainen, P. Vaattovaara, M. Ehn, M. Kulmala, J.M. Tomlinson, D.R. Collins, M.J. Cubison , E.J. Dunlea, J.A. Huffman, T.B. Onasch, M.R. Alfarra, P.I. Williams, K. Bower, Y. Kondo, J. Schneider, F. Drewnick, S. Borrmann, S. Weimer, K. Demerjian, D. Salcedo, L. Cottrell, R. Griffin, A. Takami, T. Miyoshi, S. Hatakeyama, A. Shimono, J.Y Sun, Y.M. Zhang, K. Dzepina, J.R. Kimmel, D. Sueper, J.T. Jayne, S.C. Herndon, A.M. Trimborn, L.R. Williams, E.C. Wood, C.E. Kolb, A.M. Middlebrook, U. Baltensperger, and D.R. Worsnop, Evolution of Organic Aerosols in

the Atmosphere, *Science*, 326, 1525-1529, 2009. doi: 10.1126/science.1180353.

Krämer, M., C. Schiller, A. Afchine, R. Bauer, I. Gensch, A. Mangold, S. Schlicht, N. Spelten, N. Sitnikov, S. Borrmann, M. de Reus, P. Spichtinger, On cirrus cloud supersaturations and ice crystal numbers, Atmos. Chem. Phys., 9, 21089–21128, 2009.

Lanz, V.A., A. S. H. Prévôt, M. R. Alfarra, C. Mohr, P. F. DeCarlo, S. Weimer, M. F. D. Gianini, C. Hueglin, J. Schneider, O. Favez, B. D'Anna, C. George, and U. Baltensperger, Characterization of aerosol chemical composition by aerosol mass spectrometry in Central Europe: an overview, *Atmos. Chem. Phys. Discuss.*, 9, 24985-25021, 2009.

Leitner J., Hoppe P., and Zipfel J. (2009) NanoSIMS investigation of presolar silicates and oxides in primitive solar system materials. *Lunar Planet Sci.* **40**, abstract #1512 (CD-ROM).

Niedermeier, D., S. Hartmann, R. A. Shaw, D. Covert, Th. F. Mentel, J. Schneider, L. Poulain, P. Reitz, C. Spindler, T. Clauss, A. Kiselev, E. Hallbauer, H. Wex, K. Mildenberger, and F. Stratmann, Heterogeneous freezing of droplets with immersed mineral dust particles – measurements and parameterization, Atmos. Chem. Phys. Discuss., 9, 15827-15865, 2009.

Saghafifar, H., A. Kürten, J. Curtius, S. Hassanzadeh, S. Borrmann, Characterization of a modified expansion condensation particle counter for absolute detection of nanometer-sized aerosol particles, Aerosol Sci. Technol., 43, 767-780, 2009.

Schäuble, D., Voigt, C., Kärcher, B., Stock, P., Schlager, H., Krämer, M., Schiller, C., Bauer, R., Spelten, N., de Reus, M., Szakáll, M., Borrmann, S., Weers, U., and Peter, Th.: Airborne measurements of the nitric acid partitioning in persistent contrails, Atmos. Chem. Phys., 9, 14165-14187, 2009.

Schramm, E., A. Kürten, J. Hölzer, S. Mitschke, F. Mühlberger, M. Sklorz, J. Wieser, A. Ulrich, M. Pütz, R. Schulte-Ladbeck, R. Schultze, J. Curtius, S. Borrmann, R. Zimmermann, Trace detection of organic compounds in complex sample matrices by Single Photon Ionization Ion Trap Mass Spectrometry: Real-time detection of security relevant compounds and on-line analysis of the coffee-roasting, Anal. Chem., 81, 4456–4467, 2009.

Sinha B. W., Hoppe P., Huth J., Foley S., and Andreae M. O. (2009) Sulfur isotope analysis of individual aerosol particles – a new tool for studying heterogeneous oxidation processes in the marine environment. *Atmos. Chem. Phys. Discuss.* **9**, 1-59.

Szakáll, M., K. Diehl, S. K. Mitra, S. Borrmann, A wind tunnel study on the shape, oscillation and internal circulation of large raindrops with sizes between 2.5 and 7.5 mm, J. Atmos. Sci., 66, 755-765, 2009.

Thurai, M., M. Szakáll, V. N. Bringi, K. V. Beard, S. K. Mitra, S. Borrmann, Drop shapes and axis ratio distributions: Comparison between 2-D video disdrometer and wind-tunnel measurements, Notes and Correspondence, J. Atmos. Ocean. Technol., 26, 1427-1432, 2009.

Vollmer C., Brenker F. E., Hoppe P., and Strod R. M. (2009) Direct laboratory analysis of silicate stardust from red giant stars. *Astrophys. J.* **700**, 774-782.

Vollmer C., Brenker F., Hoppe P., and Stroud R. (2009) Transmission electron microscopy of silicate stardust detected by NanoSIMS imaging in Acfer 094. *Lunar Planet Sci.* **40**, abstract #1262 (CD-ROM).

Vollmer C., Hoppe P., Stadermann F. J., Floss C., and Brenker F. E. (2009) NanoSIMS analysis and Auger electron spectroscopy of silicate and oxide stardust from the carbonaceous chondrite Acfer 094. *Geochim. Cosmochim. Acta* **73**, 7127-7149.

Vollmer, Christian (2009): Ein kosmisches Körnchen Wahrheit. **Bild der Wissenschaft plus**, November 2009, 11-13.

von Blohn, N., K. Diehl, S.K. Mitra, and S. Borrmann, 2009: Wind tunnel investigations on the growth rates and regimes, and the collection kernels during riming. J. Atmos. Sci., 66, 2359-2366,2009.

Von der Weiden, S.-L., F. Drewnick, S. Borrmann, Particle Loss Calculator – a new software tool for the assessment of the performance of aerosol inlet systems, Atmos. Meas. Tech., 2, 1099-1141, 2009.

Weigel, R., M. Hermann, J. Curtius, C. Voigt, S. Walter, T. Böttger, S. Borrmann, Experimental characterization of the COndensation PArticle counting System for high altitude aircraft borne application, Atmos. Meas. Techn., 2, 243-258, 2009.

Westphal A. et al. (2009) STARDUST interstellar preliminary examination (ISPE). *Lunar Planet Sci.* **40**, abstract #1786 (CD-ROM).

Diplomarbeiten

Freutel, Friederike, Identifizierung charakteristischer massenspektrometrischer Marker für primäre biologische Aerosolpartikel, Diplomarbeit, Universität Mainz, 2009.

Nölscher, Anke C., Windkanalexperimente zur Bestimmung des Ammoniak-Retentionskoeffizienten beim Bereifen von Graupel, Diplomarbeit, Juni 2009.

Roth, Anja, Untersuchung des Einflusses der Laserwellenlänge in der Einzelpartikel-Laserablations-Aerosol-Massenspektrometrie, November 2009.

Schmithüsen, Holger, Study of immersion and contact freezing by means of an ultrasonic levitator, August 2009.

Dissertationen

Brands, Marco, Aufbau eines flugzeuggetragenen Einzelpartikel-Aerosolmassenspektrometers, Dissertation, Universität Mainz, 2009.

Raupach, Sebastian, Digitale Einstrahl-Holografie atmosphärischer Eiskristalle, Dissertation, Universität Mainz, Juli 2009.

Zorn, Sören, Chemical composition measurements of pristine aerosols in the Southern Atlantic and Amazon regions by means of on-line mass spectrometry, Dissertation, Universität Mainz, November 2009.