

## LAC Publications 2009

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### Journal Articles 2009

Aiken, A. C., D. Salcedo, M. J. Cubison, J. A. Huffmann, P. F. DeCarlo, I. M. Ulbrich, K. S. Docherty, D. Sueper, J. R. Kimmel, D. R. Worsnop, A. Trimborn, M. Northway, E. A. Stone, J. J. Schauer, R. M. Volkamer, E. Fortner, B. De Foy, J. Wang, A. Laskin, V. Shutthanandan, J. Zheng, R. Zhang, J. Gaffney, N. A. Marley, G. Paredes-Miranda, W. P. Arnott, L. T. Molina, G. Sosa, and J. L. Jimenez, 2009:

**Mexico city aerosol analysis during MILAGRO using high resolution aerosol mass spectrometry at the urban supersite (T0) - Part 1: Fine particle composition and organic source apportionment.**

*Atmos. Chem. Phys.*, **9**, 6633-6653. [Article](#)

Bahn, M., M. Schmitt, R. Siegwolf, A. Richter, and N. Bruggemann, 2009:

**Does photosynthesis affect grassland soil-respired CO<sub>2</sub> and its carbon isotope composition on a diurnal timescale?**

*New Phytologist*, **182**, 451-460. [Article](#)

Bahreini, R., B. Ervens, A. M. Middlebrook, C. Warneke, J. A. deGouw, P. F. DeCarlo, J. L. Jimenez, C. A. Brock, J. A. Neuman, T. B. Ryerson, H. Stark, E. Atlas, J. Brioude, A. Fried, J. Holloway, J. Peischl, D. Richter, J. Walega, P. Weibring, A. G. Wollny, and F. C. Fehsenfeld, 2009:

**Organic aerosol formation in urban and industrial plumes near Houston and Dallas, Texas.**

*J. Geophys. Res.*, **114**, D00F16, doi:10.1029/2008JD011493. [Article](#)

Barmet, P., T. Kuster, A. Muhlbauer, and U. Lohmann, 2009:

**Weekly cycle in particulate matter versus weekly cycle in precipitation over Switzerland.**

*J. Geophys. Res.*, **114**, D05206, doi:10.1029/2008JD011192. [Article](#)

Battipaglia, G., M. Saurer, P. Cherubini, R. T. W. Siegwolf, and M. F. Cotrufo, 2009:

**Tree rings indicate different drought resistance of a native (*Abies alba* Mill.) and a nonnative (*Picea abies* (L.) Karst.) species co-occurring at a dry site in Southern Italy.**

*Forest Ecology and Management*, **257**, 820-828. [Article](#)

Bukowiecki, N., P. Lienemann, M. Hill, R. Figi, A. Richard, M. Furger, K. Rickers, G. Falkenberg, Y. J. Zhao, S. S. Cliff, A. S. H. Prevot, U. Baltensperger, B. Buchmann, and R. Gehrig, 2009:

**Real-World Emission Factors for Antimony and Other Brake Wear Related Trace Elements: Size-Segregated Values for Light and Heavy Duty Vehicles.**

*Environ. Sci. Technol.*, **43**, 8072-8078. [Article](#)

Bukowiecki, N., R. Richter, M. Furger, E. Weingartner, M. Aguirre, T. Huthwelker, P. Lienemann, R. Gehrig, and U. Baltensperger, 2009:

**Deposition uniformity and particle size distribution of ambient aerosol collected with a rotating drum impactor.**

*Aerosol Sci. Technol.*, **43**, 891-901. [Article](#)

Crounse, J. D., P. F. DeCarlo, D. R. Blake, L. K. Emmons, T. L. Campos, E. C. Apel, A. D. Clarke, A. J. Weinheimer, D. C. McCabe, R. J. Yokelson, J. L. Jimenez, and P. O. Wennberg, 2009:

**Biomass burning and urban air pollution over the Central Mexican Plateau.**

*Atmos. Chem. Phys.*, **9**, 4929-4944. [Article](#)

Dommen, J., H. Hellen, M. Saurer, M. Jäggi, R. Siegwolf, A. Metzger, J. Duplissy, M. Fierz, and U. Baltensperger, 2009:

**Determination of the aerosol yield of isoprene in the presence of an organic seed with carbon isotope analysis.**

*Environ. Sci. Technol.*, **43**, 6697-6702. [Article](#)

Drewnick, F., S. S. Hings, M. R. Alfarra, A. S. H. Prevot, and S. Borrmann, 2009:

**Aerosol quantification with the Aerodyne Aerosol Mass Spectrometer: detection limits and ionizer background effects.**

*Atmos. Meas. Tech.*, **2**, 33-46. [Article](#)

Dunlea, E. J., P. F. Decarlo, A. C. Aiken, J. R. Kimmel, R. E. Peltier, R. J. Weber, J. Tomlinson, D. R. Collins, Y.

Shinozuka, C. S. McNaughton, S. G. Howell, A. D. Clarke, L. K. Emmons, E. C. Apel, G. G. Pfister, A. van Donkelaar, R. V. Martin, D. B. Millet, C. L. Heald, and J. L. Jimenez, 2009:

**Evolution of Asian aerosols during transpacific transport in INTEX-B.**

*Atmos. Chem. Phys.*, **9**, 7257-7287. [Article](#)

Duplissy, J., M. Gysel, S. Sjogren, N. Meyer, N. Good, L. Kammermann, V. Michaud, R. Weigel, S. Martins dos Santos, C. Gruening, P. Villani, P. Laj, K. Sellegrí, A. Metzger, G. B. McFiggans, G. Wehrle, R. Richter, J. Dommen, Z. Ristovski, U. Baltensperger, and E. Weingartner, 2009:

**Intercomparison study of six HTDMAs: results and recommendations.**

*Atmos. Meas. Tech.*, **2**, 363-378. [Article](#)

Escrig, A., E. Monfort, I. Celades, X. Querol, F. Amato, M. C. Mingüllón, and P. K. Hopke, 2009:

**Application of optimally scaled Target Factor Analysis for assessing source contribution of ambient PM10.**

*Journal of Air and Waste Management Association*, **59**, 1296-1307. [Article](#)

Fast, J., A. C. Aiken, J. Allan, L. Alexander, T. Campos, M. R. Canagaratna, E. Chapman, P. F. DeCarlo, B. De Foy, J. Gaffney, J. de Gouw, J. C. Doran, L. Emmons, A. Hodzic, S. C. Herndon, G. Huey, J. T. Jayne, J. L. Jimenez, L. Kleinman, W. Kuster, N. Marley, L. Russell, C. Ochoa, T. B. Onasch, M. Pekour, C. Song, I. M. Ulbrich, C. Warneke, D. Welsh-Bon, C. Wiedinmeyer, D. R. Worsnop, X.-Y. Yu, and R. Zaveri, 2009:

**Evaluating simulated primary anthropogenic and biomass burning organic aerosols during MILAGRO: implications for assessing treatments of secondary organic aerosols.**

*Atmos. Chem. Phys.*, **9**, 6191-6215. [Article](#)

Ferrio, J. P., M. Cuntz, C. Offermann, R. Siegwolf, M. Saurer, and A. Gessler, 2009:

**Effect of water availability on leaf water isotopic enrichment in beech seedlings shows limitations of current fractionation models.**

*Plant Cell and Environment*, **32**, 1285-1296. [Article](#)

Fierz, M., S. Weimer, and H. Burtscher, 2009:

**Design and performance of an optimized electrical diffusion battery.**

*J. Aerosol Sci.*, **40**, 152-163. [Article](#)

Fisseha, R., M. Saurer, M. Jäggi, R. T. W. Siegwolf, J. Dommen, S. Szidat, V. Samburova, and U. Baltensperger, 2009:

**Determination of primary and secondary sources of organic acids and carbonaceous aerosols using stable carbon isotopes.**

*Atmos. Environ.*, **43**, 431-437. [Article](#)

Franssen, H. J. H., T. Kuster, P. Barnet, and U. Lohmann, 2009:

**Comment on "Winter 'weekend effect' in southern Europe and its connection with periodicities in atmospheric dynamics" by A. Sanchez-Lorenzo et al.**

*Geophys. Res. Lett.*, **36**, 3. [Article](#)

Friedman, B., H. Herich, L. Kammermann, D. S. Gross, A. Arneth, T. Holst, U. Lohmann, and D. J. Cziczo, 2009:

**Sub-arctic atmospheric aerosol composition 1: Ambient aerosol characterization.**

*Geophys. Res. Atmos.*, **114**, doi:10.1029/2009JD011772. [Article](#)

Gentile, N., R. T. W. Siegwolf, and O. Delemont, 2009:

**Study of isotopic variations in black powder: reflections on the use of stable isotopes in forensic science for source inference.**

*Rapid Communications in Mass Spectrometry*, **23**, 2559-2567. [Article](#)

Gilardoni, S., S. Liu, S. Takahama, L. M. Russell, J. D. Allan, R. Steinbrecher, J. L. Jimenez, P. F. DeCarlo, E. J. Dunlea, and D. Baumgardner, 2009:

**Characterization of organic ambient aerosol during MIRAGE 2006 on three platforms.**

*Atmos. Chem. Phys.*, **9**, 5417-5432. [Article](#)

Guerrieri, M. R., R. T. W. Siegwolf, M. Saurer, M. Jaggi, P. Cherubini, F. Ripullone, and M. Borghetti, 2009:

**Impact of different nitrogen emission sources on tree physiology as assessed by a triple stable isotope approach.**

*Atmos. Environ.*, **43**, 410-418. [Article](#)

Gysel, M., G. B. McFiggans, and H. Coe, 2009:

**Inversion of tandem differential mobility analyser (TDMA) measurements.**

*J. Aerosol Sci.*, **40**, 134-151, doi:10.1016/j.jaerosci.2008.07.013. [Article](#)

Hallquist, M., J. C. Wenger, U. Baltensperger, Y. Rudich, D. Simpson, M. Claeys, J. Dommen, N. M. Donahue, C. George, A. H. Goldstein, J. F. Hamilton, H. Herrmann, T. Hoffmann, Y. Iinuma, M. Jang, M. Jenkin, J. L. Jimenez, A. Kiendler-Scharr, W. Maenhaut, G. McFiggans, T. F. Mentel, A. Monod, A. S. H. Prevot, J. H. Seinfeld, J. D. Surratt, R. Szmigielski, and J. Wildt, 2009:

**The formation, properties and impact of secondary organic aerosol: current and emerging issues.**

*Atmos. Chem. Phys.*, **9**, 5155-5236. [Article](#)

Herich, H., L. Kammermann, B. Friedman, D. S. Gross, E. Weingartner, U. Lohmann, P. Spichtinger, M. Gysel, U. Baltensperger, and D. J. Cziczo, 2009:

**Subarctic atmospheric aerosol composition 2: hygroscopic growth properties.**

*J. Geophys. Res.*, **114**, doi:10.1029/2008JD011574. [Article](#)

Herich, H., T. Tritscher, A. Wiacek, M. Gysel, E. Weingartner, U. Lohmann, U. Baltensperger, and D. J. Cziczo, 2009:

**Water uptake of clay and desert dust aerosol particles at sub- and supersaturated water vapor conditions.**

*Phys. Chem. Chem. Phys.*, **11**, 7804-7809. [Article](#)

Huffman, J. A., K. S. Docherty, A. C. Aiken, M. J. Cubison, I. M. Ulbrich, P. F. DeCarlo, D. Sueper, J. T. Jayne, D. R. Worsnop, P. J. Ziemann, and J. L. Jimenez, 2009:

**Chemically-resolved aerosol volatility measurements from two megacity field studies.**

*Atmos. Chem. Phys.*, **9**, 7161-7182. [Article](#)

Huffman, J. A., K. S. Docherty, C. Mohr, M. J. Cubison, I. M. Ulbrich, P. J. Ziemann, T. Onasch, and J. L. Jimenez, 2009:

**Chemically-resolved volatility measurements of organic aerosol from different sources.**

*Environ. Sci. Technol.*, **43**, 5351-5357. [Article](#)

Isaksen, I. S. A., C. Granier, G. Myhre, T. K. Berntsen, S. B. Dalsøren, M. Gauss, Z. Klimont, R. Benestad, P. Bousquet, W. Collins, T. Cox, V. Eyring, D. Fowler, S. Fuzzi, P. Jöckel, P. Laj, U. Lohmann, M. Maione, P. Monks, A. S. H. Prevot, F. Raes, A. Richter, B. Bognerud, M. Schulz, D. Shindell, D. S. Stevenson, T. Storelvmo, W.-C. Wang, M. van Weele, M. Wild, and D. Wuebbles, 2009:

**Atmospheric composition change: Climate-chemistry interactions.**

*Atmos. Environ.*, **43**, 5138-5192. [Article](#)

Jenk, T. M., S. Szidat, D. Bolius, M. Sigl, H. W. Gäggeler, L. Wacker, M. Ruff, C. Barbante, C. F. Boutron, and M. Schwikowski, 2009:

**A novel radiocarbon dating technique applied to an ice core from the Alps indicating late Pleistocene ages.**

*J. Geophys. Res.*, **114**, D14305, doi:10.1029/2009JD011860. [Article](#)

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, U. Baltensperger, and D. R. Worsnop, 2009:

**Evolution of organic aerosols in the atmosphere.**

*Science*, **326**, doi:10.1126/science.1180353. [Article](#)

Jurányi, Z., M. Gysel, J. Duplissy, E. Weingartner, T. Tritscher, J. Dommen, S. Henning, M. Ziese, A. Kiselev, F. Stratmann, I. George, and U. Baltensperger, 2009:

**Influence of gas-to-particle partitioning on the hygroscopic and droplet activation behaviour of  $\alpha$ -pinene secondary organic aerosol.**

*Phys. Chem. Chem. Phys.*, **11**, 8091-8097. [Article](#)

Kress, A., M. Saurer, U. Buntgen, K. S. Treydte, H. Bugmann, and R. T. W. Siegwolf, 2009:

**Summer temperature dependency of larch budmoth outbreaks revealed by Alpine tree-ring isotope chronologies.**

*Oecologia*, **160**, 353-365. [Article](#)

Kress, A., G. H. F. Young, M. Saurer, N. J. Loader, R. T. W. Siegwolf, and D. McCarroll, 2009:

**Stable isotope coherence in the earlywood and latewood of tree-line conifers.**

*Chemical Geology*, **268**, 52-57. [Article](#)

Kulmala, M., A. Asmi, H. K. Lappalainen, K. S. Carslaw, U. Pöschl, U. Baltensperger, and e. al., 2009:  
**Introduction: European integrated project on aerosol cloud climate and air quality interactions (EUCAARI) - integrating aerosol research from nano to global scales.**  
*Atmos. Chem. Phys.*, **9**, 2825-2841. [Article](#)

Laj, P., J. Klausen, M. Bilde, C. Plass-Duelmer, G. Pappalardo, C. Clerbaux, U. Baltensperger, J. Hjorth, D. Simpson, S. Reimann, P.-F. Coheur, A. Richter, M. De Mazière, Y. Rudich, G. McFiggans, K. Torseth, A. Wiedensohler, S. Morin, M. Schulz, J. D. Allan, J.-L. Attié, I. Barnes, W. Birmili, J. P. Cammas, J. Dommen, H.-P. Dorn, D. Fowler, S. Fuzzi, M. Glasius, C. Granier, M. Hermann, I. S. A. Isaksen, S. Kinne, I. Koren, F. Madonna, M. Maione, A. Massling, O. Moehler, L. Mona, P. S. Monks, D. Müller, T. Müller, J. Orphal, V.-H. Peuch, F. Stratmann, D. Tanré, G. Tyndall, A. Abo Riziq, M. Van Roozendael, P. Villani, B. Wehner, H. Wex, and A. A. Zardini, 2009:  
**Measuring atmospheric composition change.**  
*Atmos. Environ.*, **43**, 5351-5414. [Article](#)

Lanz, V. A., S. Henne, J. Staehelin, C. Hueglin, M. K. Vollmer, M. Steinbacher, B. Buchmann, and S. Reimann, 2009:  
**Statistical analysis of anthropogenic non-methane VOC variability at a European background location (Jungfraujoch, Switzerland).**  
*Atmos. Chem. Phys.*, **9**, 3445-3459. [Article](#)

McNaughton, C. S., A. D. Clarke, V. Kapustin, Y. Shinozuka, S. G. Howell, B. E. Anderson, E. Winstead, J. Dibb, E. Scheuer, R. C. Cohen, P. Woolridge, A. Perring, L. G. Huey, S. Kim, J. L. Jimenez, E. J. Dunlea, P. F. DeCarlo, P. O. Wennberg, J. D. Crounse, A. J. Weinheimer, and F. Flocke, 2009:  
**Observations of heterogeneous reactions between Asian pollution and mineral dust over the Eastern North Pacific during INTEX-B.** *Atmos. Chem. Phys.*, **9**, 8283-8308. [Article](#)

Meyer, N. K., J. Duplissy, M. Gysel, A. Metzger, J. Dommen, E. Weingartner, M. R. Alfarra, A. S. H. Prevot, C. Fletcher, N. Good, G. McFiggans, Å. M. Jonsson, M. Hallquist, U. Baltensperger, and Z. D. Ristovski, 2009:  
**Analysis of the hygroscopic and volatile properties of ammonium sulphate seeded and unseeded SOA particles.**  
*Atmos. Chem. Phys.*, **9**, 721-732. [Article](#)

Minguillon, M. C., E. Monfort, X. Querol, A. Alastuey, I. Celades, and J. V. Miro, 2009:  
**Effect of ceramic industrial particulate emission control on key components of ambient PM10.**  
*J. Environ. Manag.*, **90**, 2558-2567. [Article](#)

Mohr, C., J. A. Huffmann, M. J. Cubison, A. C. Aiken, K. S. Docherty, J. R. Kimmel, I. M. Ulbrich, M. Hannigan, and J. L. Jimenez, 2009:  
**Characterization of primary organic aerosol emissions from meat cooking, trash burning, and motor vehicles with high-resolution aerosol mass spectrometry and comparison with ambient and chamber observations.**  
*Environ. Sci. Technol.*, **43**, 2443-2449. [Article](#)

Monks, P. S., C. Granier, S. Fuzzi, A. Stohl, M. L. Williams, H. Akimoto, M. Amann, A. Baklanov, U. Baltensperger, I. Bey, N. Blake, R. S. Blake, K. Carslaw, O. R. Cooper, F. Dentener, D. Fowler, E. Fragkou, G. J. Frost, S. Generoso, P. Ginoux, V. Grewe, A. Guenther, H. C. Hansson, S. Henne, J. Hjorth, A. Hofzumahaus, H. Huntrieser, I. S. A. Isaksen, M. E. Jenkin, J. Kaiser, M. Kanakidou, Z. Klimont, M. Kulmala, P. Laj, M. G. Lawrence, J. D. Lee, C. Liousse, M. Maione, G. McFiggans, A. Metzger, A. Mieville, N. Moussiopoulos, J. J. Orlando, C. D. O'Dowd, P. I. Palmer, D. D. Parrish, A. Petzold, U. Platt, U. Pöschl, A. S. H. Prevot, C. E. Reeves, S. Reimann, Y. Rudich, K. Sellegrí, R. Steinbrecher, D. Simpson, H. ten Brink, H. Theloke, G. R. van der Werf, R. Vautard, V. Vestreng, C. Vlachoskostas, and R. von Glasow, 2009:

**Atmospheric composition change - global and regional air quality.**  
*Atmos. Environ.*, **43**, 5268-5350. [Article](#)

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**EUSAAR - an unprecedented network of aerosol observation in Europe.**  
*Erozoru Kenkyu*, **24**, 78-83. [Article](#)

Reynolds-Henne, C. E., M. Saurer, and R. T. W. Siegwolf, 2009:  
**Temperature versus species-specific influences on the stable oxygen isotope ratio of tree rings.**  
*Trees-Structure and Function*, **23**, 801-811. [Article](#)

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**Preparation of starch and soluble sugars of plant material for the analysis of carbon isotope composition: a comparison of methods.**

Rapid Communications in Mass Spectrometry, **23**, 2476-2488. [Article](#)

Saurer, M., A. S. H. Prévôt, J. Dommen, J. Sandradewi, U. Baltensperger, and R. T. W. Siegwolf, 2009:  
**The influence of traffic and wood combustion on the stable isotopic composition of carbon monoxide.**  
Atmos. Chem. Phys., **9**, 3147-3161. [Article](#)

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**The use of heterogeneous chemistry for the characterization of functional groups at the gas/particle interface of soot and TiO<sub>2</sub> nanoparticles.**  
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*Atmos. Environ.*, **43**, 624–630. [Article](#)

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