

- Heintzenberg, J.: Studie über das Klima von Tsumeb, Meteorologisches Institut, Universität München, 1966.
- Heintzenberg, J.: Extension of a visibility meter for the registration of spectral scattering coefficients in the visible and near infrared (in German), Dept. of Meteorology, University of Mainz, Mainz, Germany, 70 pp., 1969.
- Heintzenberg, J., and Hänel, G.: A stabilized integrating nephelometer for visibility studies., *Atmos. Environ.*, 4, 585-587, 1970.
- de Bary, E., Bullrich, K., Eiden, R., Eschelbach, G., Hänel, G., and Heintzenberg, J.: Research on atmospheric optical radiation transmission. Jan.-72 - 31 Dec.-72, Scientific report for grant No. AFOSR 72-2253., 1973.
- Heintzenberg, J., and Quenzel, H.: Calculations on the determination of the scattering coefficient of turbid air with integrating nephelometers, *Atmos. Environ.*, 7, 509-519, 1973.
- Heintzenberg, J., and Quenzel, H.: On the effect of the loss of large particles on the determination of scattering coefficients with integrating nephelometers, *Atmos. Environ.*, 7, 503-507, 1973.
- Porch, W. M., Ensor, D. S., Charlson, R. J., and Heintzenberg, J.: Blue moon: is this a property of background aerosol?, *Appl. Opt.*, 12, 34-36, 1973.
- Heintzenberg, J.: On the determination of the in situ aerosol size distribution with a multiwavelength integrating nephelometer and optical particle counters, *Proceedings of the 2. GAF Conference*, October 16-19, 1974., Bad Soden, FRG, 1974, 168-183,
- Heintzenberg, J.: Study of the contribution of pollution to visibility., *Atmospheric Environment*., 8, 774, 1974.
- Heintzenberg, J.: Über die Bestimmung der Größenverteilung luftgetragener Partikeln mit optischen Methoden, *Institute für Meteorologie, Johannes Gutenberg Universität, Mainz*, 73 pp., 1974.
- Quenzel, H., Ruppertsberg, G. H., Schellhase, R., and Heintzenberg, J.: Berechnungen des systematischen Fehlers von Streulichtmeßgeräten, *Second Conference of the Gesellschaft für Aerosolforschung (GAeF)*, Bad Soden, Germany, 1974, 96-101,
- Heintzenberg, J.: Determination in situ of the size distribution of the atmospheric aerosol, *J. Aerosol Sci.*, 6, 291-303, 1975.
- Bhardwaja, P. S., Heintzenberg, J., and Charlson, R. J.: Refractive index of atmospheric aerosols, *IAMAP Symp. on Radiation in the Atmosphere*, August 19-28, Garmisch Partenkirchen, Germany, 1976, 91-93,
- Heintzenberg, J.: Determination in situ of size distribution of high tropospheric aerosol particles., *Final report for GMCC office, NOAA-Dept. of Commerce*, Silversprings, MD., 1976.
- Heintzenberg, J.: Particle size distributions from scattering data on nonspherical particles via Mie theory, *Symposium on Radiation in the Atmosphere*, August 19-28, Garmisch Partenkirchen, FRG, 1976, 157-159,
- Heintzenberg, J., and Baker, M.: Spherical particle populations: approximate analytical relationship between size distribution parameters and integral optical properties, *Appl. Opt.*, 15, 1178-1181, 1976.
- Heintzenberg, J., and Bhardwaja, P. S.: On the accuracy of the backward hemispheric integrating nephelometer, *J. Appl. Meteor.*, 15, 1092-1096, 1976.

Quenzel, H., Heintzenberg, J., and Koepke, P.: Aerosol size distribution inverted from spectral solar attenuation plus scattering measurements NASA CP-2004, Suppl., 1976.

Heintzenberg, J.: Spectral light scattering and the atmospheric aerosol over the Atlantic, 'Meteor'-Forschungsergebnisse, Reihe B, 12, 1-9, 1977.

Heintzenberg, J.: Light absorption measurements in Europe, Conference on Carbonaceous Particles in the Atmosphere, Berkeley, CA., 1978, 252-256,

Heintzenberg, J.: Light scattering parameters of internal and external mixtures of soot and non-absorbing material in atmospheric aerosols, Conference on Carbonaceous Particles in the Atmosphere, Berkeley, CA., 1978, 278-281,

Heintzenberg, J.: Particle size distributions from scattering measurements of nonspherical particles via Mie-theory, Contr. Atmos. Phys., 51, 91-99, 1978.

Heintzenberg, J.: The angular calibration of the total scatter/ backscatter nephelometer, consequences and applications, Staub-Reinhaltung der Luft, 38, 62-63, 1978.

Heintzenberg, J., and Witt, G.: The retrieval of aerosol parameters in the middle atmosphere from passive multiwavelength polarimetry, COSPAR Symposium on Remote Sounding of the Atmosphere from Space, Innsbruck, Austria, 1978, 195-198,

Heintzenberg, J., Witt, G., and Kinnmark, I.: Optical characteristics of noctilucent clouds: measurements and interpretation, 6. Annual Meeting for the Study of the Upper Atmosphere by Optical Methods, Aberdeen, Scotland, 1978, 78-842,

Heintzenberg, J., Trägårdh, C., Alm, G., Boström, R., Granat, L., Hansson, H. C., Holm, B., Moritz, S., Richter, A., and Söderlund, R.: Physical and chemical properties of aerosols under varying European influence., Dept. of Meteorology, University of Stockholm AC-48, 1979.

Heintzenberg, J., and Witt, G.: Extension of atmospheric light scattering measurements into the UV region, Appl. Opt., 18, 1281-1283, 1979.

Heintzenberg, J., Witt, G., and Henriksen, K.: Studies of the Arctic aerosol, 7. Annual Meeting for the Study of the Upper Atmosphere by Optical Methods, Tromsø, Norway, 1979, 109-125,

Heintzenberg, J.: Particle size distribution and optical properties of Arctic haze, Tellus, 32, 251-260, 1980.

Heintzenberg, J.: Polydisperse-particle-size-distribution function determined from intensity profile of angularly scattered light: Comments., Appl. Opt., 19, 12, 1894-1895, 1980.

Heintzenberg, J.: Expedition Ymer-80. Luftkemiska undersökningar, in: Ymer, 131-135, 1981.

Heintzenberg, J., Hansson, H.-C., and Lannefors, H.: The chemical composition of Arctic haze at Ny-Ålesund, Spitsbergen., Tellus, 33, 162-171, 1981.

Heintzenberg, J., Müller, H., Quenzel, H., and Thomalla, E.: Information content of optical data with respect to aerosol properties: numerical studies with a randomized minimization-search-technique inversion algorithm., Appl. Opt., 20, 1308-1315, 1981.

Winkler, P., Heintzenberg, J., and Covert, D.: Vergleich zweier Messverfahren zur Bestimmung der Quellung von Aerosolpartikeln mit der relativen Feuchte, Meteorologische Rundschau, 34, 114-119, 1981.

- Heintzenberg, J.: Measurement of light absorption and elemental carbon in atmospheric aerosol samples from remote locations., in: Particulate Carbon, edited by: Wolff, G. T., and Klimisch, R. L., Plenum Press, New York, 371-377, 1982.
- Heintzenberg, J.: Size-segregated measurements of particulate elemental carbon and aerosol light absorption at remote Arctic locations., *Atmos. Environ.*, 16, 2461-2469, 1982.
- Heintzenberg, J.: Size-segregated measurements of particulate elemental carbon by optical methods at urban and remote sites., 2. European Symposium Physico-chemical Behaviour of Atmospheric Pollutants, Varese, Italy, 1982, 510-516,
- Heintzenberg, J.: Workshop measurements of the aerosol absorption coefficient with an integrating plate method and an integrating sphere photometer., in: Light absorption by aerosol, edited by: Gerber, H., and Hindman, E., Spectrum Press, Hampton VA, 267-273, 1982.
- Heintzenberg, J., Bäcklin, L., and Moberg, B.: Direct recording of wind sector distributions in extreme environments with a wind vane., Department of Meteorology, University of Stockholm., StockholmAP-20, 18, 1982.
- Heintzenberg, J., and Welch, R.: Retrieval of aerosol size distribution from angular scattering functions: Effects of particle compositions and shape., *Appl. Opt.*, 21, 822-830, 1982.
- Heintzenberg, J., and Bäcklin, L.: A high sensitivity integrating nephelometer for airborne air pollution studies., *Atmos. Environ.*, 17, 433-436, 1983.
- Heintzenberg, J., Bischof, W., Odh, S.-Å., and Moberg, B.: An investigation of possible sites for a background monitoring station in the European Arctic, International Meteorological Institute in Stockholm, Department of Meteorology, Stockholm University, Stockholm, Report Nr. AP-22, 74 pp, 1983.
- Heintzenberg, J., and Larssen, S.: SO₂ and SO₄ in the Arctic: Interpretation of observations at three Norwegian Arctic-subArctic stations, *Tellus*, 35B, 255-265, 1983.
- Lannefors, H., Heintzenberg, J., and Hansson, H.-C.: A comprehensive study of physical and chemical parameters of the Arctic summer aerosol; results from the Swedish expedition Ymer-80, *Tellus*, 35B, 40-54, 1983.
- Larssen, S., and Heintzenberg, J.: Emission measurements of particulate matter, water and soot from passenger cars and light trucks, NILU Oppdragsrapport Nr. 0-8224, (in Norwegian), 1983.
- Covert, D. S., and Heintzenberg, J.: Measurements of the degree of internal/external mixing of hygroscopic compounds and soot in atmospheric aerosols, *Sci. Total Environ.*, 36, 347-352, 1984.
- Heintzenberg, J.: Antropogena föroreningar i den arktiska luften, Proc. Symposium "Arktis som livsmiljø", Voksenåsen, Oslo, 1984, 7-9,
- Heintzenberg, J.: Physical and chemical aerosol characteristics in extremely clean air masses at Cape Grim, Tasmania, 11. International Conference on Atmospheric Aerosols, Condensation and Ice Nuclei, Budapest, Hungary, 1984, 128-132,
- Heintzenberg, J., and Covert, D. S.: Size distribution of elemental carbon, sulphur and total mass in the radius range 10⁻⁶ to 10⁻⁴ cm, *Sci. Total Environ.*, 36, 289-297, 1984.
- Heintzenberg, J., and Winkler, P.: Elemental carbon in the urban aerosol: Results

of a seventeen month study in Hamburg, FRG, *Sci. Total Environ.*, 36, 27-38, 1984.

Heintzenberg, J.: Physical and chemical aerosol characteristics in clean air masses at Cape Grim, Tasmania, *J. Rech. Atmos.*, 19, 125-129, 1985.

Heintzenberg, J.: What can we learn from aerosol measurements at baseline stations?, *J. Atmos. Chem.*, 3, 153-169, 1985.

Heintzenberg, J., Hansson, H.-C., Ogren, J. A., and Odh, S.-Å.: Concept and realization of an air pollution monitoring station in the European Arctic, *AMBIO*, 14, 152-157, 1985.

Heintzenberg, J., and Mészáros, A.: Elemental carbon, sulfur and metals in aerosol samples at a Hungarian regional air pollution station, *Journal of the Hungarian Meteorological Service*, 89, 313-319, 1985.

Heintzenberg, J., and Moberg, B.: Inventory of research grade air monitoring stations operated by European research groups, *Dept. of Meteorology, University of Stockholm, Stockholm*, AP-25, 38, 1985.

Heintzenberg, J., and Ogren, J. A.: On the operation of the TSI-3020 condensation nuclei counter at altitudes up to 10 km, *Atmos. Environ.*, 19, 1385-1387, 1985.

Heintzenberg, J., and Ogren, J. A.: An assessment of the impact of pollution on global cloud albedo, *Tellus*, 37B, 308-309, 1985.

Ogren, J. A., Heintzenberg, J., and Charlson, R. J.: In-situ sampling of clouds with a droplet to aerosol converter, *Geophys. Res. Lett.*, 12, 121-124, 1985.

Wendling, P., Wendling, R., Renger, W., Covert, D. S., Heintzenberg, J., and Moerl, P.: Calculated radiative effects of Arctic haze during a pollution episode in spring 1983 based on ground-based and airborne measurements, *Atmos. Environ.*, 19, 2181-2193, 1985.

Blanchet, J.-P., Heintzenberg, J., and Winkler, P.: Radiative heating during an intense pollution episode in Hamburg, FRG, *Contr. Atmos. Phys.*, 59, 359-374, 1986.

Hansson, H.-C., Heintzenberg, J., Asking, L., Swietlicki, E., Ogren, J. A., and Asking, L.: Combined sampling and analytical methodology for the investigation of the atmospheric aerosol., 2. Int. Aerosol Conference, 22-26 September 1986, Berlin, 1986, 1192-1195,

Hansson, H.-C., Martinsson, B. G., Swietlicki, E., Asking, L., Heintzenberg, J., and Ogren, J. A.: PIXE in complex analytical systems for atmospheric chemistry, *Nucl. Instr. Meth. Phys. Res.*, 22B, 235-240, 1986.

Heintzenberg, J.: A fibre-optical chopper with digital control, *J. Physics E: Sci. Instr.*, 19, 220-221, 1986.

Heintzenberg, J.: The air chemistry program of the expedition Ymer-80, Final report for the Swedish Government, (in Swedish), 8 pp, 1986.

Heintzenberg, J., Hansson, H.-C., Ogren, J. A., Covert, D. S., and Blanchet, J.-P.: Physical and chemical properties of Arctic aerosols and clouds, in: *Arctic Air Pollution*, edited by: Stonehouse, B., Cambridge University Press, Cambridge, U.K., 25-35, 1986.

Heintzenberg, J., Hansson, H.-C., Ogren, J. A., and Odh, S.-Å.: A baseline aerosol monitoring station for near-unattended operation, In "Aerosols: Formation and Reactivity", *Proc. 2nd Int. Aerosol Conf.*, Berlin, Pergamon Journals, Oxford, Berlin, 1986, 75-78,

- Heintzenberg, J., and Ogren, J. A.: The present knowledge of atmospheric transparency in the visible due to aerosols: variability in space and time, International Meeting on Atmospheric Transparency for Satellite Applications, Capri, Italy, Sept 15.-19. 1986, 1986, 49-70,
- Clarke, A. D., Noone, K., Heintzenberg, J., Warren, S., and Covert, D. S.: Aerosol light absorption measurement techniques: analysis and intercomparisons, *Atmos. Environ.*, 21, 1455-1465, 1987.
- Covert, D. S., Hansson, H.-C., and Heintzenberg, J.: Hygroscopic and thermal properties of aerosols, Annual Meeting of the American Association for Aerosol Research, Reno, NE, USA, 1987,
- Heintzenberg, J., and Covert, D. S.: Chemically resolved submicrometric size distribution and external mixing of the Arctic haze aerosols, *Tellus*, 39B, 374-382, 1987.
- Karlqvist, A., and Heintzenberg, J.: Arctic pollution and the Greenhouse effect, Science for Peace, Toronto, 1987, 14,
- Heintzenberg, J.: A processor-controlled multisample soot photometer, *Aerosol Sci. Techn.*, 8, 227-233, 1988.
- Johansson, B., and Heintzenberg, J.: On the determination of droplet size distributions with the counter-flow virtual impactor, in: *Annalen der Meteorologie*, 1988, 151-153,
- Källström, M., Heintzenberg, J., Hansson, H.-C., and Jonsson, S.: Chemical composition of insoluble particles in an ice cap on Storöya, Svalbard, in: *Annals of Glaciology, Symposium on Ice Core Analysis*, Bern, Switzerland, 30 March - 3 April, 1987, *Annals of Glaciology*, 10, 1988, 204,
- Noone, K. J., Charlson, R. J., Covert, D. S., Ogren, J. A., and Heintzenberg, J.: Cloud droplets: solute concentration is size dependent, *J. Geophys. Res.*, 93, 9477-9482, 1988.
- Noone, K. J., Ogren, J. A., and Heintzenberg, J.: An examination of the chemical and physical variability of clouds at a mountain-top site in central Sweden, *Ann. Meteorologie*, 25, 282-284, 1988.
- Noone, K. J., Ogren, J. A., Heintzenberg, J., Charlson, R. J., and Covert, D. S.: Design and calibration of a counterflow virtual impactor for sampling of atmospheric fog and cloud droplets, *Aerosol Sci. Techn.*, 8, 235-244, 1988.
- Ogren, J., Heintzenberg, J., and Noone, K.: Measurements of the partitioning of aerosol mass and number between cloud droplets and interstitial air, *Ann. Meteor.*, 25, 34-36, 1988.
- Ogren, J. A., Heintzenberg, J., Zuber, A., Hansson, H.-C., Noone, K. J., Covert, D. S., and Charlson, R. J.: Measurements of the short-term variability of aqueous-phase mass-concentrations in cloud droplets, in: *Acid Deposition at High Elevation Sites*, edited by: Unsworth, M. H., and Fowler, D., NATO ASI Series, Kluwer Academic Publishers, 125-137, 1988.
- Covert, D. S., and Heintzenberg, J.: Aerosol size and chemistry in the Arctic: AGASP III, Annual Meeting of the American Association for Aerosol Research, Reno, NE, USA, 1989, 6,
- Heintzenberg, J.: Arctic haze: air pollution in polar regions, *AMBIO*, 18, 50-55, 1989.
- Heintzenberg, J.: Fine particles in the global troposphere, *Tellus*, 41B, 149-160,

1989.

Heintzenberg, J., Ogren, J. A., Noone, K. J., and Gärdneus, L.: The size distribution of submicrometer particles within and about stratocumulus cloud droplets on Mt. Åreskutan, Sweden, *Atmos. Res.*, 24, 89-101, 1989.

Ogren, J. A., Heintzenberg, J., Zuber, A., Noone, K. J., and Charlson, R. J.: Measurements of the size-dependence of non-volatile aqueous mass concentrations in cloud droplets, *Tellus*, 41B, 24-31, 1989.

Covert, D. S., Heintzenberg, J., and Hansson, H.-C.: Electro-optical detection of external mixtures in aerosols, *Aerosol Sci. Technol.*, 12, 446-456, 1990.

Heintzenberg, J.: AEROLIT: a literature data base for researchers in atmospheric science, 3. International Aerosol Conference, September 24-27, 1990, 1990, 1144-1147,

Heintzenberg, J., and Bigg, E. K.: Tropospheric transport of trace substances in the Southern Hemisphere, *Tellus*, 42B, 355-363, 1990.

Heintzenberg, J., and Covert, D. S.: On the distribution of physical and chemical particle properties in the atmospheric aerosol, *J. Atmos. Chem.*, 10, 383-397, 1990.

Heintzenberg, J., and Covert, D. S.: The degree of mixing in atmospheric aerosols: an overlooked dimension, 3. International Aerosol Conference, September 24-27, 1990, Kyoto, Japan, 1990, 77-81,

Noone, K. J., Ogren, J. A., and Heintzenberg, J.: An examination of clouds at a mountain-top site in Central Sweden: The distribution of solute within cloud droplets, *Atmos. Res.*, 25, 3-15, 1990.

Ogren, J. A., and Heintzenberg, J.: Parametric aerosol sampling at low concentration levels, Report AA-1, Department of Meteorology, Stockholm University AA-1, 11pp, 1990.

Raschke, E., Schmetz, J., Heintzenberg, J., Kandel, R., and Saunders, R.: The International Cirrus Experiment (ICE) - A joint European effort, *ESA Journal*, 193-199, 1990.

Zagorodnov, V., Heintzenberg, J., Watanabe, O., and Fuyii, Y.: Automatic measurements of crystal dimensions and concentration of inclusions in ice cores, methods and first results, *Materialy Glyatsiologicheskikh Issledovaniy*, 69, 177-184, 1990.

Artaxo, P., Maenhaut, W., and Heintzenberg, J.: Trace elements and black carbon in aerosols from the Antarctica Peninsula, *Symposium on the Tropospheric Chemistry of the Antarctic Region*, Boulder, CO., 1991, 15,

Covert, D. S., Hansson, H.-C., Winkler, P., and Heintzenberg, J.: The degree of mixing of hygroscopic properties in source and receptor locations in Northern Europe, *Annual Meeting of the American Association for Aerosol Research*, Traverse City, MI USA, 1991, 292,

Heintzenberg, J., Holmén, K., Odh, S.-Å., and Ogren, J. A.: Air monitoring in the Arctic 1979-1990, Swedish Environmental Protection Agency, Report of the Program for Environmental Quality 3945, 1991.

Heintzenberg, J., and Jacobsson, A.: Particulate elemental carbon, in: *Baseline 89 Atmospheric Program*, edited by: Gras, S. R. W. a. J. L., Bureau of Meteorology and CSIRO Division of Atmospheric Research, Melbourne, 69-70, 1991.

Heintzenberg, J., Ogren, J. A., Odh, S.-Å., Bäcklin, L., and Danielsen, T.: The

MISU baseline station, Department of Meteorology, Stockholm UniversityAA-02, 1991.

Heintzenberg, J., Ström, J., Ogren, J. A., and Fimpel, H.-P.: Vertical profiles of aerosol properties in the summer troposphere of the European Arctic, *Atmos. Environ.*, 25A, 621-628, 1991.

Heintzenberg, J., and Winkler, P.: Elemental carbon in the atmosphere: challenges for the trace analyst, *Fresenius' Journal of Analytical Chemistry*, 340, 540-543, 1991.

Noone, B., Heintzenberg, J., Noone, K., Ogren, J., and Ström, J.: CVI-measurements during ICE-89, Fourth Workshop, International Cirrus Experiment/ European Cloud Radiation Experiment, Reading, UK, 1991, 10-12,

Noone, K. B., and Heintzenberg, J.: On the determination of droplet size distributions with the counterflow virtual impactor, *Atmos. Res.*, 26, 389-406, 1991.

Ogren, J., Noone, K., Hallberg, A., Heintzenberg, J., and Okada, K.: Interactions between aerosol particles and clouds, *EUROTRAC Annual Report 1990*, p. 37-44, 1991.

Zagorodnov, V., Heintzenberg, J., Watanabe, O., and Fujii, Y.: Automated measurements of crystal dimensions and concentration of inclusions in ice cores: Methods and first results, *Cold Reg. Sci. Technol.*, 19, 327-333, 1991.

Hallberg, A., Ogren, J. A., Noone, K. J., Heintzenberg, J., Berner, A., Solly, I., Kruisz, C., Reischl, G., Fuzzi, S., Facchini, M. C., Hansson, H.-C., Wiedensohler, A., and Svenningsson, I. B.: Phase partitioning for different aerosol species in fog, *Tellus*, 44B, 545-555, 1992.

Heintzenberg, J.: CVI: Realtidsmätningar av föroreningar i dimma och moln. In: *Mätbladet*, 12, 1992.

Heintzenberg, J.: The Po-Valley Fog Experiment 1989: What have we learned, where do we go from here ?, *Tellus*, 44B, 443-447, 1992.

Heintzenberg, J.: Atmospheric Particles and Nuclei: Book Review, *J. Atmos. Chem.*, 15, 97-99, 1992.

Heintzenberg, J., Holmén, K., Odh, S. Å., and Engardt, M.: Air monitoring in the Arctic, Swedish Environmental Protection Agency, PMK 4094, 1992.

Lelieveld, J., and Heintzenberg, J.: Sulfate cooling effect on climate through in-cloud oxidation of anthropogenic SO₂, *Science*, 258, 117-120, 1992.

Martin, M., and Heintzenberg, J.: Calibration of an optical counter for liquid-borne particles, *J. Aerosol Sci.*, 23, 373-378, 1992.

Noone, K. J., Hallberg, A., Heintzenberg, J., Svenningsson, B., Hansson, H.-C., Wiedensohler, A., and Ogren, J. A.: Size-dependent scavenging efficiencies of aerosol particles in a polluted fog, 11th International Conference on Clouds and Precipitation, Montreal, Canada, 1992, 181-183,

Noone, K. J., Ogren, J. A., Hallberg, A., Heintzenberg, J., Ström, J., Hansson, H.-C., Svenningsson, I. B., Wiedensohler, A., Fuzzi, S., Facchini, M. C., Arends, B. G., and Berner, A.: Changes in aerosol size- and phase distributions due to physical and chemical processes in fog, *Tellus*, 44B, 489-504, 1992.

Ogren, J., Noone, K., Hallberg, A., and Heintzenberg, J.: Aerosol particles and clouds: partitioning and interactions, *EUROTRAC subproject GCE Annual Report for 1991*, 1992.

- Ogren, J. A., Noone, K. J., Hallberg, A., Heintzenberg, J., Schell, D., Berner, A., Solly, I., Kruisz, C., Reischl, G., Arends, B. G., and Wobrock, W.: Measurements of the size dependence of the concentration of non-volatile material in fog droplets, *Tellus*, 44B, 570-580, 1992.
- Ström, J., Heintzenberg, J., Noone, K. J., Noone, K. B., Ogren, J. A., Albers, F., and Quante, M.: A preliminary comparison between measurements of ice water and crystal concentration by the CVI and the PMS-2D probe during ICE-89, 5. ICE/EUCREX workshop, Clermont-Ferrand, France, 1992, 1-4,
- Ström, J., Heintzenberg, J., Noone, K. J., Noone, K. B., Ogren, J. A., Albers, F., and Quante, M.: CVI measurements on small crystals in cirrus clouds, 11th International Conference on Clouds and Precipitation, Montreal, Canada, 1992, 471-472,
- Ström, J., Okada, K., and Heintzenberg, J.: On the state of mixing of particles due to Brownian coagulation, *J. Aerosol Sci.*, 23, 467-480, 1992.
- Covert, D. S., and Heintzenberg, J.: Size distributions and chemical properties of aerosol at Ny-Ålesund, Svalbard, *Atmos. Environ.*, 27A, 2989-2997, 1993.
- Hansson, M. E., Hansson, H.-C., Jonsson, S., and Heintzenberg, J.: Chemical composition of insoluble particles in superimposed ice on Storöya, Svalbard, Department of Meteorology, Stockholm University CM-82, 1993.
- Heintzenberg, J., Engardt, M., Holmén, K., Leck, C., and Odh, S.-Å.: Air monitoring in the Arctic 1992, Naturvårdsverket, PMK Report, 1993.
- Heintzenberg, J., and Rummukainen, M.: Airborne particles in snow, *J. Glaciology*, 39, 239-244, 1993.
- Langner, J., Bates, T. S., Charlson, R. J., Clarke, A. D., Durkee, P. A., Gras, J., Heintzenberg, J., Hofmann, D. J., Huebert, B., Leck, C., Lelieveld, J., Ogren, J. A., Prospero, J., Quinn, P. K., Rodhe, H., and Ryaboshapko, A. G.: The global atmospheric sulfur cycle: an evaluation of model predictions and observations, Stockholm University, CM Report Report CM-81, 28, 1993.
- Lin, H., and Heintzenberg, J.: A theoretical study of the counterflow virtual impactor, European Aerosol Conference, Duisburg, 1993,
- Noone, K. B., Noone, K. J., Heintzenberg, J., Ström, J., and Ogren, J. A.: In-situ observations of cloud microphysical properties using the counterflow virtual impactor, *J. Atmos. Oceanic Technol.*, 10, 294-303, 1993.
- Ström, J., and Heintzenberg, J.: New insight into cirrus clouds with CVI-measurements, EUCREX Workshop, Stockholm, 1993, 24-29,
- Wiedensohler, A., Aalto, P., Covert, D. S., Heintzenberg, J., and McMurry, P. H.: Intercomparison of three different ultrafine measurement methods for aerosol size distributions with low particle number concentrations, *J. Aerosol Sci.*, 24, 551-554, 1993.
- Covert, D. S., Wiedensohler, A., Aalto, P., Heintzenberg, J., and McMurry, P. H.: The trimodal nature of the submicrometer particle size distribution in the marine boundary layer of the Arctic summer, Abstracts of the Fourth International Aerosol Conference, Los Angeles, USA, 1994,
- Hallberg, A., Noone, K. J., Ogren, J. A., Svenningsson, I. B., Flossmann, A., Wiedensohler, A., Hansson, H.-C., Heintzenberg, J., Anderson, T., Arends, B., and Maser, R.: Phase partitioning of aerosol particles in clouds at Kleiner Feldberg, J.

Atmos. Chem., 19, 107-127, 1994.

Hallberg, A., Ogren, J. O., Noone, K. J., Okada, K., Heintzenberg, J., and Svenningsson, I. B.: The influence of aerosol particle composition on cloud droplet formation, J. Atmos. Chem., 19, 153-171, 1994.

Heintzenberg, J.: Properties of the log-normal particle size distribution, Aerosol Sci. Technol., 21, 46-48, 1994.

Heintzenberg, J.: The Life Cycle of the Atmospheric Aerosol, in: Topics in Atmospheric and Interstellar Physics and Chemistry, edited by: Boutron, C. F., Les éditions de physique, Les Ulis Cedex A, France, 251-270, 1994.

Heintzenberg, J., Holmen, K., Engardt, M., Leck, C., Odh, S.-Å., and Bäcklin, L.: Atmospheric baseline monitoring near Ny-Ålesund, Swedish Polar Research Secretariat in Swedish Research in Svalbard - A cruise report, 1994.

Heintzenberg, J., and Leck, C.: Seasonal variation of the atmospheric aerosol near the top of the marine boundary layer over Spitsbergen related to the Arctic sulphur cycle, Tellus, 46B, 52-67, 1994.

Heintzenberg, J., and Ström, J.: In situ measurements of small cirrus crystals, NATO Advanced Research Workshop on Clouds, 1994-03-21/25, Ringberg, FRG, 1994,

Orsini, D. A., Wiedensohler, A., Stratmann, F., and Heintzenberg, J.: In-situ volatility thermograms of ultrafine aerosols - preliminary tests with a TDMA, Abstracts of the Fourth International Aerosol Conference, Los Angeles, USA, 1994, Ström, J., Busen, R., Quante, M., Guillemet, B., Brown, P. R. A., and Heintzenberg, J.: Pre-EUCREX intercomparison of airborne humidity measuring instruments, J. Atmos. Oceanic Technol., 11, 1392-1399, 1994.

Ström, J., and Heintzenberg, J.: Water vapour, condensed water and crystal concentration in orographically influenced cirrus clouds, J. Atmos. Sci., 51, 2368-2383, 1994.

Ström, J., Heintzenberg, J., Noone, K. J., Noone, K. B., Ogren, J. A., Albers, F., and Quante, M.: Small crystals in cirrus clouds: their residue size distribution, cloud water content and related cloud properties, Atmos. Res., 32, 125-141, 1994.

Ström, J., Schröder, F., Heintzenberg, J., Anderson, T., Strauss, B., and Stingl, J.: Recent measurements in cirrus and contrail using the measurements with the MISU CVI-payload during ICE'94, in: 7th Workshop of the European Cloud and

Radiation Experiment, 7th Workshop of the European Cloud and Radiation Experiment (EUCREX), Villeneuve d'Ascq, France, 1994, 83-85,

Wiedensohler, A., Aalto, P., Covert, D., Heintzenberg, J., and McMurry, P. H.: Intercomparison of four methods to determine size distributions of low

concentration ($\approx 100 \text{ cm}^{-3}$), ultrafine aerosols ($3 < D_p < 10 \text{ nm}$) with illustrative data from the Arctic, Aerosol Sci. Technol., 21, 95-109, 1994.

Wiedensohler, A., Aalto, P., Covert, D., McMurry, P., Bigg, K., Heintzenberg, J., Leck, C., Nilsson, D., Persson, C., Tryzell, R., and Westin, M.: Travel to the north pole: a scientific and personal report. In: TSI Journal, 9, 1994.

Charlson, R. J., and Heintzenberg, J.: Introduction to Aerosol Forcing of Climate, in: Aerosol Forcing of Climate, edited by: Charlson, R. J., and Heintzenberg, J., John Wiley & Sons, New York, 1-10, 1995.

Charlson, R. J., and Heintzenberg, J.: *Aerosol Forcing of Climate*. John Wiley &

Sons, New York, 1995.

Heintzenberg, J.: Aerosols and Climatic Change, 1995 European Aerosol Conference, Helsinki, Finland, 1995, S1-S2,

Heintzenberg, J., Fouquart, Y., Heymsfield, A., Ström, J., and Brogniez, G.: Interactions of radiation and microphysics in cirrus, in: Clouds, Chemistry and Climate, edited by: Crutzen, P. J., and Ramanathan, V., Series I: Global Environmental Change, Springer, Berlin, 29-54, 1995.

Lelieveld, J., Crutzen, P. J., Grassl, H., Heintzenberg, J., Jaenicke, R., Kaufman, Y. J., Kiehl, J. T., Penner, J. E., Rodhe, H., Schult, I., and Tegen, I.: Group Report: Magnitudes and geographical variations and uncertainties of properties of tropospheric and stratospheric aerosols and their forcing, in: Aerosol Forcing of Climate, edited by: Charlson, R. J., and Heintzenberg, J., John Wiley & Sons, Berlin, 335-348, 1995.

Lin, H., and Heintzenberg, J.: A theoretical study of the counterflow virtual impactor, J. Aerosol Sci., 26, 903-914, 1995.

Tryzell, R., Heintzenberg, J., and Leck, C.: Soot and sulphur aerosols in the air over the Atlantic Ocean, Swedish Polar Research Secretariat, Cruise Report Swedish Antarctic Research Programme, 1995.

Bussemer, M., and Heintzenberg, J.: Laboratory calibration of a soot photometer for the spectral light absorption of atmospheric aerosol samples, J. Aerosol Sci., 27, S693-S694, 1996.

Covert, D. S., Wiedensohler, A., Aalto, P., Heintzenberg, J., McMurry, P. H., and Leck, C.: Aerosol number size distributions from 3 to 500 nm diameter in the arctic marine boundary layer during summer and autumn, Tellus, 48B, 197-212, 1996.

Engardt, M., Holmén, K., and Heintzenberg, J.: Short-term variations in atmospheric CO₂ at Ny-Ålesund, Spitsbergen during spring and early summer, Tellus B, 48B, 33-43, 1996.

Heintzenberg, J.: Eigenschaften und Wirkungen von Aerosolpartikeln in der freien Troposphäre, Emissionen des Luftverkehrs und ihre Wirkung auf die Atmosphäre, Berlin-Adlershof, 13./14. 5. 1996, 1996, 13pp,

Heintzenberg, J., and Charlson, R. J.: Design and applications of the integrating nephelometer: a review, J. Atmos. Oceanic Technol., 13, 987-1000, 1996.

Heintzenberg, J., Graf, H.-F., Charlson, R. J., and Warneck, P.: Climate forcing and the physico-chemical life cycle of the atmospheric aerosol - Why do we need an integrated, interdisciplinary global research programme?, Contr. Atmos. Phys., 69, 261-271, 1996.

Heintzenberg, J., Okada, K., and Ström, J.: On the composition of non-volatile material in upper tropospheric aerosols and cirrus crystals, Atmos. Res., 41, 81-88, 1996.

Heintzenberg, J., and Wendisch, M.: On the sensitivity of cloud albedo to the partitioning of particulate absorbers in cloudy air, Contr. Atmos. Phys., 69, 491-499, 1996.

Leck, C., Bigg, E. K., Covert, D. S., Heintzenberg, J., Maenhaut, W., Nilsson, E. D., and Wiedensohler, A.: Overview of the atmospheric research program during the International Arctic Ocean Expedition of 1991 (IAOE-91) and its scientific results, Tellus, 48B, 136-155, 1996.

- Maenhaut, W., Ducastel, G., Leck, C., Nilsson, E. D., and Heintzenberg, J.: Multi-elemental composition and sources of the high Arctic atmospheric aerosol during summer and autumn, *Tellus*, 48B, 300-321, 1996.
- Marquardt, W., Brüggemann, E., and Heintzenberg, J.: Cleaning Eastern Germany with an Acid Bath, *AMBIO*, 25, 215-216, 1996.
- Pourchet, M., Mélières, M. A., Pinglot, J. F., and Heintzenberg, J.: Estimation of Chernobyl deposition in high latitudes or high altitudes by ^{137}Cs measurements in snow, International UNESCO Conference "Ten years after Chernobyl Catastrophe", 14.-17.May, Minsk, Belarus, 1996,
- Quinn, P. K., Anderson, T. L., Bates, T. S., Dlugi, R., Heintzenberg, J., Hoyningen-Huene, W. v., Kulmala, M., Russell, P. B., and Swietlicki, E.: Closure in tropospheric aerosol-climate research: a review and future needs for addressing aerosol direct shortwave radiative forcing, *Contr. Atmos. Phys.*, 69, 547-577, 1996.
- Wendisch, M., and Heintzenberg, J.: Twomey effect versus aerosol absorption in clouds, in: IRS' 96: Current problems in atmospheric radiation, edited by: Smith, W. L., and Stamnes, K., A. Deepak Publishing, Hampton, Virginia, 179-182, 1996.
- Wiedensohler, A., Covert, D., Swietlicki, E., Aalto, P., Heintzenberg, J., and Leck, C.: Occurrence of an ultrafine particle mode less than 20 nm in diameter in the marine boundary layer of the Arctic summer and autumn, *Tellus*, 48B, 213-222, 1996.
- Yuskiewicz, B., Orsini, D., Stratmann, F., Wiedensohler, A., and Heintzenberg, J.: The influence of fog and haze events on submicron particle size distributions in the Po Valley region of Northern Italy, *J. Aerosol Sci.*, 27, S101-S102, 1996.
- Boonjawat, J., Heintzenberg, J., and Carmichael, G.: Capacity building in atmospheric aerosol measurements in Southeast Asia, Synthesis Workshop on Greenhouse Gas Emissions; aerosols, Land Use and Cover Changes in Southeast Asia, Chungli, Taipei, 1997, 128-130,
- Flentje, H., Dubois, R., Heintzenberg, J., and Karbach, H.-J.: Retrieval of aerosol properties from boundary layer extinction measurements with a DOAS system, *Geophysical Research Letters*, 24, 2019-2022, 1997.
- Gieray, R., Wieser, P., Engelhardt, T., Swietlicki, E., Hansson, H.-C., Mentes, B., Orsini, D., Martinsson, B., Svenningsson, B., Noone, K., and Heintzenberg, J.: Phase partitioning of aerosol constituents in cloud based on single-particle and bulk analysis, *Atmos. Environ.*, 31, 2491-2502, 1997.
- Heintzenberg, J.: Aerosol research issues in the free troposphere, Workshop on Japanese study on the behaviour of greenhouse gases and aerosols: accomplishments, current activity and future plans, Nagoya, Japan, 1997, p 4,
- Heintzenberg, J.: Progress in closure studies related to aerosol forcing of climate, IGAC Symposium on Atmospheric Chemistry and Future Global Environment, Nagoya, Japan, 1997, 122-125,
- Heintzenberg, J., Charlson, R. J., Clarke, A. D., Liou, S. S., Ramaswamy, C. V., Shine, K. P., Wendisch, M., and Helas, G.: Measurements and modelling of aerosol single-scattering albedo: progress, problems and prospects, *Contr. Atmos. Phys.*, 70, 249-263, 1997.
- Keller, S., and Heintzenberg, J.: Quantification of graphitic carbon on polycarbonate filters by Raman spectroscopy, *J. Aerosol Sci.*, 28, S609-S610,

1997.

Schwarzenböck, A., Heintzenberg, J., and Mertes, S.: New minimum lower cut size for a counterflow virtual impactor complemented by the upper cut of an interstitial inlet, EAC 1997, Hamburg, 1997, S277-S278,

Schwarzenböck, A., Heintzenberg, J., Mertes, S., and Wiedensohler, A.: Quantitative aerosol activation monitoring, EAC 1997, Hamburg, 1997, S79-S80, Ström, J., Strauss, B., Anderson, T., Schröder, F., Heintzenberg, J., and Wendling, P.: In-situ observations of the microphysical properties of young cirrus clouds, J. Atmos. Sci., 54, 2542-2553, 1997.

Swietlicki, E., Hansson, H.-C., Martinsson, B., Mertes, B., Orsini, D., Svenningsson, B., Wiedensohler, A., Wendisch, M., Pahl, S., Winkler, P., Colvile, R. N., Gieray, R., Lüttke, J., Heintzenberg, J., Cape, J. N., Hargreaves, K. J., Storeton-West, R. L., Acker, K., Wieprecht, W., Berner, A., Kruisz, C., Facchini, M. C., Laj, P., Fuzzi, S., Jones, B., and Nason, P.: Source identification during the Great Dun Fell cloud experiment 1993, Atmos. Environ., 31, 2441-2451, 1997.

Wehner, B., Birmili, W., Heintzenberg, J., and Wiedensohler, A.: Measurement of particulate number-based emission characteristics of a coal fired plant, J. Aerosol Sci., 28, S407-S408, 1997.

Bazhev, A. M., Rototaeva, O., Heintzenberg, J., Stenberg, M., and Pinglot, J. F.: Physical and chemical studies in the region of the southern slope of Mount Elbrus, Caucasus, J. Glaciol., 44, 214-222, 1998.

Bond, T. C., Charlson, R. J., and Heintzenberg, J.: Quantifying the emission of light-absorbing particles: measurements tailored to climate studies, Geophysical Research Letters, 25, 337-340, 1998.

Dubois, R., Schimang, H., Heintzenberg, J., and Leck, C.: SODAR-Messungen zur Charakterisierung der arktischen, planetaren Grenzschicht, Deutsche Meteorologen-Tagung, Leipzig, 1998, 450,

Frank, G., Martinsson, B. G., Cederfelt, S.-I., Berg, O. H., Swietlicki, E., Wendisch, M., Yuskiewicz, B., Heintzenberg, J., Wiedensohler, A., Orsini, D., Stratmann, F., Laj, P., and Ricci, L.: Droplet formation and growth in polluted fogs, Contr. Atmos. Phys., 71, 65-85, 1998.

Fuzzi, S., Laj, P., Ricci, L., Orsi, G., Heintzenberg, J., Wendisch, M., Yuskiewicz, B., Mertes, S., Orsini, D., Schwanz, M., Wiedensohler, A., Stratmann, F., Berg, O. H., Swietlicki, E., Frank, G., Martinsson, B. G., Günther, A., Dierksen, J., Schell, D., Jaeschke, W., Berner, A., Dusek, U., Galambos, Z., Kruisz, C., Mesfin, S. N., Wobrock, W., Arends, B., and ten Brink, H.: Overview of the Po Valley fog experiment 1994 (CHEMDROP), Contr. Atmos. Phys., 71, 3-19, 1998.

Heintzenberg, J.: Condensed water aerosols, in: Atmospheric Particles, edited by: Harrison, R. M., and Van Grieken, R., John Wiley & Sons Chichester, 509-542, 1998.

Heintzenberg, J.: What does atmospheric research need PIXE for?, 8th International Conference on Particle Induced X-ray Emission and its Analytical Application, Lund, 1998,

Heintzenberg, J., Althausen, D., Ansmann, A., Lourdes Bugalho, M. d., Henning, S., Mattis, I., Müller, D., Neusüß, C., Philippin, S., Silva, A. M., Hoyningen-Huene, W. v., Wagner, F., Wandinger, U., Weise, D., and Wiedensohler, A.: Clear sky column closure experiment (ACE-2), European Climate Science Conference,

- Vienna, 1998, 09/03,
Heintzenberg, J., Dubois, R., Hermann, M., Keil, A., Wendisch, M., and Wiedensohler, A.: Luftgetragene Aerosol- und Wolkenmessungen am IfT, 1. Braunschweiger Symposium für Flugmesstechnik, Technische Universität Braunschweig, 1998, 3,
Heintzenberg, J., Müller, K., Birmili, W., Spindler, G., and Wiedensohler, A.: Mass-related aerosol properties over the Leipzig Basin, J. Geophys. Res., 103, 13125-13135, 1998.
Heintzenberg, J., Wendisch, M., Yuskiewicz, B., Orsini, D., Wiedensohler, A., Stratmann, F., Frank, G. P., Martinsson, B. G., Schell, D., Fuzzi, S., and Orsi, G.: Characteristics of haze, mist and fog, Contr. Atmos. Phys., 71, 21-31, 1998.
Heintzenberg, J., Wiedensohler, A., Conrath, T., Kütz, S., and Dubois, R.: Modification of a commercial condensation particle counter for boundary layer balloon-borne aerosol studies, 5th International Aerosol Conference, Edinburgh, 12. - 18. September, 1998, S707-S708,
Hoyningen-Huene, W. v., Schmidt, T., Chan, A. K., Heintzenberg, J., and Neusüß, C.: Climate-relevant aerosol parameters of South-East-Asian forest fire haze, J. Aerosol Sci., 29, S1259-S1260, 1998.
Hoyningen-Huene, W. v., Schmidt, T., K., C. A., Heintzenberg, J., and Neusüß, C.: Climate-relevant aerosol parameters of South-East-Asian forest fire haze, Scientific Research Program of Monbusho, Tokyo, 207-231, 1998.
Philippin, S., Neusüß, C., Wiedensohler, A., Heintzenberg, J., Carrico, C. M., and Rood, M. J.: Local scattering and backscattering closure experiment in anthropogenically influenced marine air masses, Fifth Scientific Conference on the International Global Atmospheric Chemistry Project (IGAC), Seattle, Washington, USA, 19-25 August, 1998,
Philippin, S., Neusüß, C., Wiedensohler, A., Heintzenberg, J., Carrico, C. M., and Rood, M. J.: Optical properties of anthropogenically influenced aerosols in a marine atmosphere: an optical closure experiment, J. Aerosol Sci., 29, S1151-S1152, 1998.
Rodhe, H., Bates, T., Charlson, R. J., Heintzenberg, J., and Huebert, B.: Comment on "Sulfate Versus Carbonaceous Materials on the East Coast of the United States: Results from TARFOX". In: IGACactivities Newsletter, 1998.
Rototaeva, O., Hmelevskoj, I. F., Bazhev, A. M., Heintzenberg, J., Stenberg, M., and Pinglot, J. F.: Structure and chemical composition of the active layer of the Bolshoy Azau glacier (Elbrus) on the accumulation area, Institute of Geography of the Russian Academy of Sciences, Moscow, 25-33, 1998.
Schwarzenböck, A., Heintzenberg, J., Mertes, S., and Kos, G.: Cloud droplet break-up in a counterflow virtual impactor due to high sampling velocities, 5th International Aerosol Conference, Edinburgh, 12.-18. September, 1998, 345-346,
Schwarzenböck, A., Heintzenberg, J., Mertes, S., and Wiedensohler, A.: Correlations of the partitioning fraction of aerosols in clouds, 5th International Aerosol Conference, Edinburgh, 12-18 September, 1998, 53-54,
Stenberg, M., Eriksson, C., and Heintzenberg, J.: Trace substances in snow and firn from the vicinity of two small research stations in Antarctica, AMBIO, 27, 451-455, 1998.
Wendisch, M., Mertes, S., Heintzenberg, J., Wiedensohler, A., Schell, D., Wobrock,

- W., Frank, G., Martinsson, B. G., Fuzzi, S., Orsi, G., Kos, G., and Berner, A.: Drop size distribution and *LWC* in Po valley fog, *Contr. Atmos. Phys.*, 71, 87-100, 1998.
- Yuskiewicz, B., Orsini, D., Stratmann, F., Wendisch, M., Wiedensohler, A., Heintzenberg, J., Martinsson, B., Frank, G., Wobrock, W., and Schell, D.: Changes in submicrometer particle distributions and light scattering during haze and fog events in a highly polluted environment, *Contr. Atmos. Phys.*, 71, 33-45, 1998.
- Birmili, W., Heintzenberg, J., and Wiedensohler, A.: Representative measurement and parameterization of the submicron continental particle size distribution, *J. Aerosol Sci.*, 30, S229-S230, 1999.
- Birmili, W., Heintzenberg, J., and Wiedensohler, A.: Parameterization of the continental submicron particle size distribution on the basis of number concentration, 12th International Congress International Society for Aerosols in Medicine (ISAM), Wien, 1999,
- Bond, T. C., Bussemer, M., Wehner, B., Keller, S., Charlson, R. J., and Heintzenberg, J.: Light absorption by primary particle emissions from a lignite burning plant, *Environ. Sci. Technol.*, 33, 3887-3891, 1999.
- Brenninkmeijer, C. A. M., Crutzen, P. J., Fischer, H., Güsten, H., Hans, W., Heinrich, G., Heintzenberg, J., Hermann, M., Immelmann, T., Kersting, D., Maiss, M., Nolle, M., Pitscheider, A., Pohlkamp, H., Scharffe, D., Specht, K., and Wiedensohler, A.: CARIBIC - civil aircraft for global measurements of trace gases and aerosols in the tropopause region, *J. Atmos. Oceanic Technol.*, 16, 1373-1383, 1999.
- Dippel, B., and Heintzenberg, J.: Soot characterization in atmospheric particles from different sources by NIR FT Raman spectroscopy, *J. Aerosol Sci.*, 30, S907-S908, 1999.
- Dippel, B., Jander, H., and Heintzenberg, J.: NIR FT Raman spectroscopic study of flame soot, *Phys. Chem. Chem. Phys.*, 1, 4707-4712, 1999.
- Heintzenberg, J.: Die Rolle des Aerosols im Klimasystem, *Chem. uns. Zeit*, 33, 158-164, 1999.
- Heintzenberg, J., Wiedensohler, A., and Kütz, S.: Modification of a commercial condensation particle counter for boundary layer balloon-borne aerosol studies, *J. Atmos. Oceanic Technol.*, 16, 597-601, 1999.
- Hermann, M., Heintzenberg, J., and Wiedensohler, A.: Aerosol particle number concentrations in the upper troposphere and lower stratosphere measured by CARIBIC, 30, *J. Aerosol Sci.*, S205-S206 pp., 1999.
- Hoyningen-Huene, W. v., Silva, A. M., Bugalho, M. L., Heintzenberg, J., Henning, S., and Pilippin, S.: Comparison of volumetric physico-chemical properties between two different sites during ACE 2 CLEARCOLUMN, 6th Scientific Conference on the International Global Atmospheric Chemistry Project (IGAC)13-17 September, 1999, Bologna, Italy, 1999, P2.14,
- Kaden, H., Zosel, J., Heintzenberg, J., and Richter, K.: Untersuchungen zu einem miniaturisierten Psychrometer für die Troposphärenforschung (in German), 4. Dresdner Sensor-Symposium, Dresden, Germany, 1999, 95-96,
- Schwarzenböck, A., Heintzenberg, J., Mertes, S., and Wieprecht, W.: Size dependency of 25-850 nm aerosol particles incorporated in cloud droplets, European Aerosol Conference, Prag, 1999, 241-242,
- Schwarzenböck, A., Mertes, S., Heintzenberg, J., and Wobrock, W.: First in situ

- evidence for Bergeron-Findeisen process, European Aerosol Conference, Prag, 1999, S131-S132,
- Wehner, B., Bond, T. C., Birmili, W., Bussemer, M., Heintzenberg, J., Wiedensohler, A., and Charlson, R. J.: Climate-relevant particulate emission characteristics of a coal fired heating plant, *Environ. Sci. Technol.*, 33, 3881-3886, 1999.
- Ansmann, A., Althausen, D., Wandinger, U., Franke, K., Müller, D., Wagner, F., and Heintzenberg, J.: Vertical profiling of the Indian aerosol plume with six-wavelength lidar during INDOEX: A first case study, *Geophysical Research Letters*, 27, 963-966, 2000.
- Bugalho, M. L., Hoyningen-Huene, W. v., Silva, A. M., Heintzenberg, J., Henning, S., and Pilippin, S.: Comparação de Propriedades Físico/Químicas Volumétricas de aerossóis captados em dois locais diferentes da Costa Sudoeste Portuguesa durante CLEARCOLUMN, 2ª Assembleia Luso-Espanhola de Geodesia e Geofísica, Lagos, Portugal, 2000, 449-450,
- Carrico, C. M., Rood, M. J., Ogren, J. A., Neusüß, C., Wiedensohler, A., and Heintzenberg, J.: Aerosol optical properties at Sagres, Portugal during ACE 2, *Tellus*, 52B, 694-715, 2000.
- Heintzenberg, J.: Atmospheric aerosols, 10 years of IGAC research. IGAC Community Review Meeting, Aspen, Colorado, 2000.
- Heintzenberg, J.: Atmospheric aerosols, or understanding the haze we are living in, MIT Global Change Forum, 21./23. 06., 2000,
- Heintzenberg, J.: Airborne aerosol measurements: State of the art, future need and directions, GORDON Research Conference, Boston, 24./28. 06., 2000,
- Heintzenberg, J.: Aerosol influence on the radiation budget: Where do we stand?, 20th International Laser Radar Conference, Vichy, 10./14.07., 2000,
- Heintzenberg, J., and Bussemer, M.: Development and application of a spectral light absorption photometer for aerosol and hydrosol samples, *J. Aerosol Sci.*, 31, 801-812, 2000.
- Heintzenberg, J., Covert, D. S., and Van Dingenen, R.: Size distribution and chemical composition of marine aerosols: A compilation and review, *Tellus*, 52B, 1104-1122, 2000.
- Heintzenberg, J., and Erfurt, G.: Modification of a commercial integrating nephelometer for outdoor measurements, *J. Atmos. Oceanic Technol.*, 17, 1645-1650, 2000.
- Hoyningen, W. v., Silva, A. M., Bugalho, L., Schmidt, T., Costa, M. J., and Heintzenberg, J.: Characterization of aerosol optical properties during ACE-2 CLEARCOLUMN at the south coast of Portugal, *Tellus*, 52B, in press, 2000.
- Keil, A., Wendisch, M., and Heintzenberg, J.: Twomey Effect Over Land Induced By Power Plant Emissions, IRS 2000: Current Problems in Atmospheric Radiation, 2000.
- Müller, D., Franke, K., Wagner, F., Althausen, D., Ansmann, A., and Heintzenberg, J.: Vertical profiling of optical and physical particle properties over the tropical Indian Ocean with six-wavelength lidar, part I: Seasonal cycle, *J. Geophys. Res.*, 106, 28567-28575, 2000.
- Müller, D., Franke, K., Wagner, F., Althausen, D., Ansmann, A., Heintzenberg, J., and Verver, G.: Vertical profiling of optical and physical particle properties over the

- tropical Indian Ocean with six-wavelength lidar, part II: Case studies, *J. Geophys. Res.*, 106, 28577-28595, 2000.
- Russell, P. B., and Heintzenberg, J.: An overview of the ACE 2 Clear Sky Column Closure Experiment (CLEARCOLUMN), *Tellus*, 52B, 463-483, 2000.
- Schwarzenböck, A., and Heintzenberg, J.: Cut size minimization and cloud element break-up in a ground-based CVI, *J. Aerosol Sci.*, 31, 477-489, 2000.
- Schwarzenböck, A., Heintzenberg, J., and Mertes, S.: Incorporation of aerosol particles between 25 and 850 nanometers into cloud elements: Measurement with a new complementary sampling system, *Atmos. Res.*, 52, 241-260, 2000.
- Wehner, B., Wiedensohler, A., and Heintzenberg, J.: Submicrometer aerosol size distributions and mass concentration of the Millennium fireworks 2000 in Leipzig, Germany, *J. Aerosol Sci.*, 31, 1489-1493, 2000.
- Zahn, A., Brenninkmeijer, C. A. M., Maiss, M., Scharffe, D., Crutzen, P. J., Hermann, M., Heintzenberg, J., Güsten, H., Heinrich, G., Fischer, H., Cuijpers, J. W. M., and Velthoven van, P. F. J.: Identification of extratropical 2-way troposphere-stratosphere mixing based on CARIBIC measurements of O₃, CO, and ultrafine particles, *J. Geophys. Res.*, 105, 1527-1535, 2000.
- Birmili, W., Wiedensohler, A., Heintzenberg, J., and Lehmann, K.: Atmospheric particle number size distribution in Central Europe: Statistical relations to air masses and meteorology, *J. Geophys. Res.*, 106, 32005-32018, 2001.
- Heintzenberg, J., Maßling, A., and Birmili, W.: The connection between hygroscopic and optical particle properties in the atmospheric aerosol, *Geophysical Research Letters*, 28, 3649-3651, 2001.
- Laj, P., Flossmann, A. I., Wobrock, W., Fuzzi, S., Orsi, G., Ricci, L., Mertes, S., Schwarzenböck, A., Heintzenberg, J., and Ten Brink, H.: Behaviour of H₂O₂, NH₃ and black carbon in mixed phase clouds during CIME, *Atmos. Res.*, 58, 315-336, 2001.
- Martinsson, B. G., Papaspiropoulos, G., Heintzenberg, J., and Hermann, M.: Fine mode particulate sulphur in the tropopause region measured from intercontinental flights (CARIBIC), *Geophysical Research Letters*, 28, 1175-1178, 2001.
- Mertes, S., Schwarzenböck, A., Laj, P., Wobrock, W., Pichon, J. M., Orsi, G., and Heintzenberg, J.: Changes of cloud microphysical properties during the transition from supercooled to mixed-phase conditions during CIME, *Atmos. Res.*, 58, 267-294, 2001.
- Okada, K., Heintzenberg, J., Kai, K., and Qin, Y.: Shape of atmospheric mineral particles collected in three Chinese arid regions, *Geophysical Research Letters*, 28, 3123-3126, 2001.
- Ramanathan, V., Crutzen, P. J., Lelieveld, J., Mitra, A. P., Althausen, D., Anderson, J., Andreae, M. O., Cantrell, W., Cass, G. R., Chung, C. E., Clarke, A. D., Coakley, J. A., Collins, W. D., Conant, W. C., Dulac, F., Heintzenberg, J., Heymsfield, A. J., Holben, B., Howell, S., Hudson, J., Jayaraman, A., Kiehl, J. T., Krishnamurti, T. N., Lubin, D., McFarquhar, G., Novakov, T., Ogren, J. A., Podgorny, I. A., Prather, K., Priestley, K., Prospero, J. M., Quinn, P. K., Rajeev, K., Rasch, P., Rupert, S., Sadourny, R., Satheesh, S. K., Shaw, G. E., Sheridan, P., and Valero, F. P. J.: Indian Ocean Experiment: An integrated analysis of the climate forcing and effects of the great Indo-Asian haze, *J. Geophys. Res.*, 106, 28371-28398, 2001.

- Schwarzenböck, A., Mertes, S., Heintzenberg, J., Wobrock, W., and Laj, P.: Impact of the Bergeron Findeisen process on the release of aerosol particles during the evolution of cloud ice, *Atmos. Res.*, 58, 295-313, 2001.
- Wendisch, M., Heintzenberg, J., and Bussemer, M.: Measurement-based aerosol forcing calculations: The influence of model complexity, *Meteor. Z.*, 10, 45-60, 2001.
- Wendisch, M., Müller, D., Schell, D., and Heintzenberg, J.: An airborne spectral albedometer with active horizontal stabilization, *J. Atmos. Oceanic Technol.*, 18, 1856-1866, 2001.
- Wobrock, W., Flossmann, A. I., Monier, M., Pichon, J. M., Cortez, L., Fournol, J. F., Schwarzenböck, A., Mertes, S., Heintzenberg, J., Laj, P., Orsi, G., Ricci, L., Fuzzi, S., Ten Brink, H., Jongejan, P., and Otjes, R.: The Cloud Ice Mountain Experiment 1998: Experiment overview and modelling of the microphysical processes during the seeding by isentropic gas expansion, *Atmos. Res.*, 58, 231-265, 2001.
- Zahn, A., Brenninkmeijer, C. A. M., Crutzen, P. J., Fischer, H., and Heintzenberg, J.: The CARIBIC passenger aircraft measurement container: Future development and first results, *Aviation, aerosols, contrails and cirrus clouds*, Seeheim, Germany, 2001, 33-36,
- Heintzenberg, J., Hermann, M., Martinsson, B. G., and Papaspiropoulos, G.: Number and sulfur derived 3-parameter aerosol size distributions in the tropopause region from CARIBIC flights between Germany and the Indic, *J. Aerosol Sci.*, 33, 595-608, 2002.
- Heintzenberg, J., Okada, K., and Luo, B. P.: The distribution of optical properties among atmospheric submicrometer particles of given electrical mobilities, *J. Geophys. Res.*, 107, doi: 10.1029/2001JD000372, 2002.
- Heintzenberg, J., Raes, F., and Schwartz, S. E.: Tropospheric aerosols, in: *Atmospheric Chemistry in a Changing World - An Integration and Synthesis of a Decade of Tropospheric Chemistry Research*, edited by: Brasseur, G., Prinn, R. G., and Pszenny, A. A. P., Springer, Berlin, Germany, 125-156, 2002.
- Keil, A., Wendisch, M., and Heintzenberg, J.: A case study on microphysical and radiative properties of power-plant-originated clouds, *Atmos. Res.*, 63, 291-301, 2002.
- Leck, C., Heintzenberg, J., and Engardt, M.: A meridional profile of the chemical composition of submicrometer particles over the East Atlantic Ocean: Regional and hemispheric variabilities, *Tellus*, 54B, 377-384, 2002.
- Papaspiropoulos, G., Martinsson, B. G., Zahn, A., Brenninkmeijer, C. A. M., Hermann, M., Heintzenberg, J., Fischer, H., and van Velthoven, P. F. J.: Aerosol elemental concentrations in the tropopause region from intercontinental flights with the Civil Aircraft for Regular Investigation of the Atmosphere Based on an Instrument Container (CARIBIC) platform, *J. Geophys. Res.*, 107, 4671, doi: 10.1029/2002JD002344, 2002.
- Silva, A. M., Bugalho, M. L., Costa, M. J., Hoyningen-Huene, W. v., Schmidt, T., Heintzenberg, J., and Henning, S.: Aerosol optical properties from columnar data during the second Aerosol Characterization Experiment on the south coast of Portugal, *J. Geophys. Res.*, 107, 10.1029/2002JD002196, 2002.
- Witter, M., Berndt, T., Böge, O., Stratmann, F., and Heintzenberg, J.: Gas-Phase Ozonolysis: Rate Coefficients for a Series of Terpenes and Rate Coefficients and

- OH Yields for 2-Methyl-2-butene and 2,3-Dimethyl-2-butene, *Int. J. Chem. Kinet.*, 34, 394-403, 2002.
- Zahn, A., Brenninkmeijer, C. A. M., Crutzen, P. J., Parrish, D. D., Sueper, D., Heinrich, G., Güsten, H., Fischer, H., Hermann, M., and Heintzenberg, J.: Electrical discharge source for tropospheric ozone-rich transients, *J. Geophys. Res.*, 107, doi: 10.1029/2002JD002345, 2002.
- Anderson, T. L., Charlson, R. J., Schwartz, S. E., Knutti, R., Boucher, O., Rodhe, H., and Heintzenberg, J.: Climate Forcing by Aerosols — a Hazy Picture, *Science*, 300, 1103-1104, 2003.
- Anderson, T. L., Charlson, R. J., Schwartz, S. E., Knutti, R., Boucher, O., Rodhe, H., and Heintzenberg, J.: The parasol effect on climate: Response, *Science*, 302, 1679-1681, 2003.
- Berndt, T., Böge, O., Heintzenberg, J., and Claus, P.: From atmospheric research to an industrial process: The formation of propylene oxide, *Industrial & Engineering Chemistry Research*, 42, 2870-2873, 2003.
- Heintzenberg, J.: Physics and chemistry of aerosols, in: *Encyclopedia of Atmospheric Sciences*, edited by: Holton, J. R., Pyle, J., and Curry, J. A., Academic Press, London, UK, 34-40, 2003.
- Heintzenberg, J., Hermann, M., and Theiss, D.: Out of Africa: High aerosol concentrations in the upper troposphere over Africa, *Atmos. Chem. Phys.*, 3, 1191-1198, 2003.
- Heintzenberg, J., Tuch, T., Wehner, B., Wiedensohler, A., Wex, H., Ansmann, A., Mattis, I., Müller, D., Wendisch, M., Eckhardt, S., and Stohl, A.: Arctic haze over Central Europe, *Tellus B*, 55, 796-807, 2003.
- Hermann, M., Heintzenberg, J., Wiedensohler, A., Zahn, A., Heinrich, G., and Brenninkmeijer, C. A. M.: Meridional distributions of aerosol particle number concentrations in the upper troposphere and lower stratosphere obtained by Civil Aircraft for Regular Investigation of the Atmosphere Based on an Instrument Container (CARIBIC) flights, *J. Geophys. Res.*, 108, doi:10.1029/2001JD0010077, 2003.
- Naoe, H., Heintzenberg, J., Okada, K., Zaizen, Y., Hayashi, K., Tateishi, T., Igarashi, Y., Dokiya, Y., and Kinoshita, K.: Composition and size distribution of submicrometer aerosol particles observed on Mt. Fuji in the volcanic plumes from Miyakejima, *Atmos. Environ.*, 37, 3047-3055, 2003.
- Okada, K., and Heintzenberg, J.: Size distribution, state of mixture and morphology of urban aerosol particles at given electrical mobilities, *J. Aerosol Sci.*, 34, 1539-1553, 2003.
- Siebert, H., Wendisch, M., Conrath, T., Teichmann, U., and Heintzenberg, J.: A new tethered balloon-borne turbulence platform for fine-scale observations within the cloudy boundary layer, *Boundary-Layer Meteorology*, 106, 461-482, 2003.
- Stratmann, F., Siebert, H., Spindler, G., Wehner, B., Althausen, D., Heintzenberg, J., Hellmuth, O., Rinke, R., Schmieder, U., Seidel, C., Tuch, T., Uhrner, U., Wiedensohler, A., Wandinger, U., Wendisch, M., Schell, D., and Stohl, A.: New-particle formation events in a continental boundary layer: First results from the SATURN experiment, *Atmos. Chem. Phys.*, 3, 1445-1459, 2003.
- Heintzenberg, J.: Aerosols and their characteristics (Chapter 3), in: *Global change and the earth system: A planet under pressure*, edited by: Steffen, W., Sanderson,

- A., Tyson, P., Jäger, J., Matson, P., Moore, B., Oldfield, F., Richardson, K., Schellnhuber, J., Turner, B. L., and Wasson, R., IGBP Global Change Series, Springer, Berlin, 106-107, 2004.
- Heintzenberg, J., Birmili, W., Wiedensohler, A., Nowak, A., and Tuch, T.: Structure, variability and persistence of the submicrometer marine aerosol, *Tellus*, 56B, 357-367, 2004.
- Heintzenberg, J., Okada, K., Trautmann, T., and Hoffmann, P.: Modeling of the signals of an optical particle counter for real non-spherical particles, *Appl. Opt.*, 43, 5893-5900, 2004.
- Stratmann, F., Kiselev, A., Wurzler, S., Wendisch, M., Heintzenberg, J., Charlson, R. J., Diehl, K., Wex, H., and Schmidt, S.: Laboratory studies and numerical simulations of cloud droplet formation under realistic super-saturation conditions, *J. Atmos. Oceanic Technol.*, 21, 876-887, 2004.
- Berndt, T., Böge, O., Stratmann, F., Heintzenberg, J., and Kulmala, M.: Rapid formation of sulfuric acid particles at near-atmospheric conditions, *Science*, 307, 698-700, 2005.
- Martinsson, B. G., Nguyen, H. N., Brenninkmeijer, C. A. M., Zahn, A., Heintzenberg, J., Hermann, M., and van Velthoven, P. J.: Characteristics and origin of lowermost stratospheric aerosol at northern midlatitudes under volcanically quiescent conditions based on CARIBIC observations, *J. Geophys. Res.*, 110, D12201, doi:10.1029/2004JD005644, 2005.
- Bond, T., Wehner, B., Plewka, A., Wiedensohler, A., Heintzenberg, J., and Charlson, R. J.: Climate-relevant properties of primary particulate emissions from oil and natural gas combustion, *Atmos. Environ.*, 40, 3574-3587, 2006.
- Cheng, Y.-F., Eichler, H., Wiedensohler, A., Heintzenberg, J., Zhang, Y.-H., Hu, M., Herrmann, H., Liu, S., Gnauk, T., Brüggemann, E., and He, L.-Y.: Mixing state of element carbon and non-light-absorbing aerosol components derived from in situ particle optical properties at Xinken in Pearl River Delta of China, *J. Geophys. Res.*, 111, doi: 10.1029/2005JD006929, 2006.
- Heintzenberg, J., Leck, C., Birmili, W., Wehner, B., Tjernström, M., and Wiedensohler, A.: Aerosol number-size distributions during clear and fog periods in the summer high Arctic: 1991, 1996, and 2001, *Tellus*, 58B, 41-50, 2006.
- Heintzenberg, J., Wiedensohler, A., Tuch, T. M., Covert, D. S., Sheridan, P., Ogren, J. A., Gras, J., Nessler, R., Kleefeld, C., Kalivitis, N., Aaltonen, V., Wilhelm, R.-T., and Havlicek, M.: Intercomparisons and aerosol calibrations of 12 commercial integrating nephelometers of 3 manufacturers, *J. Atmos. Oceanic Technol.*, 23, 902-914, 2006.
- Tuch, T., Herbarth, O., Franck, U., Peters, A., Wehner, B., Wiedensohler, A., and Heintzenberg, J.: Weak correlation of ultrafine aerosol particle concentrations < 800 nm between two sites within one city, *J. Expo. Anal. Environ. Epidemiol.*, 16, 486-490, 2006.
- Birmili, W., Stopfkuchen, K., Hermann, M., Wiedensohler, A., and Heintzenberg, J.: Particle penetration through a 300 m inlet pipe for sampling atmospheric aerosols from a tall meteorological tower, *Aerosol Sci. Technol.*, 41, 811-817, 2007.
- Brenninkmeijer, C. A. M., Crutzen, P., Boumard, F., Dauer, T., Dix, B., Ebinghaus, R., Filippi, D., Fischer, H., Franke, H., Frieß, U., Heintzenberg, J., Helleis, F., Hermann, M., Kock, H. H., Koeppel, C., Lelieveld, J., Leuenberger, M., Martinsson,

- B. G., Miemczyk, S., Moret, H. P., Nguyen, H. N., Nyfeler, P., Oram, O., O'Sullivan, D., Penkett, S., Platt, U., Pupek, M., Ramonet, M., Randa, B., Reichelt, M., Rhee, T. S., Rohwer, J., Rosenfeld, K., Scharffe, D., Schlager, H., Schumann, U., Slemr, F., Sprung, D., Stock, P., Thaler, R., Valentino, F., Velthoven, P. v., Waibel, A., Wandel, A., Waschitschek, K., Wiedensohler, A., Xueref-Remy, I., Zahn, A., Zech, U., and Ziereis, H.: Civil Aircraft for the regular investigation of the atmosphere based on an instrumented container: The new CARIBIC system, *Atmos. Chem. Phys.*, 7, 4953-4976, 2007.
- Heintzenberg, J., Wehner, B., and Birmili, W.: "How to find bananas in the atmospheric aerosol" New approach for analyzing atmospheric nucleation and growth events, *Tellus B*, 59, 273-282, 2007.
- Spracklen, D., Pringle, K., Carslaw, K., Mann, G., Manktelow, P., and Heintzenberg, J.: Evaluation of a global aerosol microphysics model against size-resolved particle statistics in the marine atmosphere, *Atmos. Chem. Phys.*, 7, 2073-2090, 2007.
- Berndt, T., Stratmann, F., Bräsel, S., Heintzenberg, J., Laaksonen, A., and Kulmala, M.: SO₂ oxidation products other than H₂SO₄ as a trigger of new particle formation - Part 1: Laboratory investigations *Atmos. Chem. Phys.*, 8, 6365-6374, 2008.
- Cheng, Y. F., Heintzenberg, J., Wehner, B., Wu, Z. J., Hu, M., and Mao, J. T.: Traffic restrictions in Beijing during the Sino-African Summit 2006: aerosol size distribution and visibility compared to long-term in situ observations, *Atmos. Chem. Phys.*, 8, 7583-7594, 2008.
- Cheng, Y. F., Wiedensohler, A., Eichler, H., Heintzenberg, J., Tesche, M., Ansmann, A., Wendisch, M., Su, H., Althausen, D., Herrmann, H., Gnauk, T., Brüggemann, E., Hu, M., and Zhang, Y. H.: Relative humidity dependence of aerosol optical properties and direct radiative forcing in the surface boundary layer at Xinken in Pearl River Delta of China: An observation based numerical study, *Atmos. Environ.*, 42, 6373-6397, 2008.
- Cheng, Y. F., Wiedensohler, A., Eichler, H., Su, H., Gnauk, T., Brüggemann, E., Herrmann, H., Heintzenberg, J., Slanina, J., Tuch, T., Hu, M., and Zhang, Y. H.: Aerosol optical properties and related chemical apportionment at Xinken in Pearl River Delta of China, *Atmos. Environ.*, 42, 6351-6372, 2008.
- Ehrlich, A., Bierwirth, E., Wendisch, M., Gayet, J.-F., Mioche, G., Lampert, A., and Heintzenberg, J.: Cloud phase identification of low-level Arctic clouds from airborne spectral radiation measurements: test of three approaches, *Atmos. Chem. Phys.*, 8, 7493-7505, 2008.
- Heimann, M., Andreae, M. O., and Heintzenberg, J.: Atmosphärische Langzeitmessungen biogeochemischer atmosphärischer Spurenstoffe und Aerosole in Zentralsibirien: Das Zotino Tall Tower Observatory (ZOTTO). 4. Nationales Kolloquium "Umgang mit dem Klimawandel", Bad Honnef, Deutschland, 2008.
- Heintzenberg, J., Birmili, W., Theiss, D., and Kisilyakhov, Y.: The atmospheric aerosol over Siberia, as seen from the 300 meter ZOTTO tower, *Tellus*, 60B, 276-285, 10.1111/j.1600-0889.2007.00335.x, 2008.
- Hermann, M., Brenninkmeijer, C. A. M., Slemr, F., Heintzenberg, J., Martinsson, B.

G., Schlager, H., van Velthoven, P. J., Wiedensohler, A., Zahn, A., and Ziereis, H.: Submicrometer aerosol particle distributions in the upper troposphere over the mid-latitude North Atlantic - Results from the third route of "CARIBIC", *Tellus*, 60B, 106-117, 2008.

Nguyen, H. N., Martinsson, B. G., Wagner, J. B., Carlemalm, E., Ebert, M., Weinbruch, S., Brenninkmeijer, C. A. M., Heintzenberg, J., Herman, M., Schuck, T., Velthoven, P. F. J. v., and Zahn, A.: Chemical composition and morphology of individual aerosol particles from a CARIBIC flight at 10 km altitude between 50 °N and 30°S, *J. Geophys. Res.*, 113, D23209, doi:23210.21029/22008JD009956, 2008.

Niedermeier, D., Wex, H., Brüggemann, E., Kiselev, A., Henk, H., Stratmann, F., and Heintzenberg, J.: LACIS-Measurements and Parameterization of Sea-Salt Particle Hygroscopic Growth and Activation, *Atmos. Chem. Phys.*, 8, 579-590, 2008.

Wendisch, M., Hellmuth, O., Ansmann, A., Heintzenberg, J., Engelmann, R., Althausen, D., Eichler, H., Müller, D., Hu, M., Zhang, Y., and Mao, J.: Radiative and dynamic effects of absorbing aerosol particles over the Pearl River Delta, China, *Atmos. Environ.*, 42, 6405-6416, 2008.

Heintzenberg, J.: The SAMUM-1 experiment over Southern Morocco: Overview and introduction, *Tellus*, 61B, 2-11, 2009.

Heintzenberg, J., and Charlson, R. J.: Introduction, in: *Clouds in the Perturbed Climate System Their Relationship to Energy Balance, Atmospheric Dynamics, and Precipitation*, edited by: Heintzenberg, J., and Charlson, R. J., MIT Press, Cambridge, MA, 1-16, 2009.

Heintzenberg, J., and Charlson, R. J.: *Clouds in the perturbed climate system: Their relationship to energy balance, atmospheric dynamics, and precipitation*. MIT Press, Cambridge, MA, USA, 2009.

Köppe, M., Hermann, M., Brenninkmeijer, C. A. M., Heintzenberg, J., Schlager, H., Schuck, T., Slemr, F., Sprung, D., Velthoven, P. F. J. v., Wiedensohler, A., Zahn, A., and Ziereis, H.: Origin of aerosol particles in the mid-latitude and subtropical upper troposphere and lowermost stratosphere from cluster analysis of CARIBIC data, *Atmos. Chem. Phys.*, 9, 8413-8430, 2009.

Naoe, H., Hasegawa, S., Heintzenberg, J., Okada, K., Uchiyama, A., Zaizen, Y., Kobayashi, E., and Yamazaki, A.: State of mixture of atmospheric submicrometer black carbon particles and its effect on particulate light absorption, *Atmos. Environ.*, 43, 1296-1301, 2009.

Siebesma, A. P., Brenguier, J.-L., Bretherton, C. S., Grabowski, W. W., Heintzenberg, J., Kärcher, B., Lehmann, K., Petch, J. C., Spichtinger, P., Stevens, B., and Stratmann, F.: Cloud-controlling Factors, in: *Clouds in the Perturbed Climate System Their Relationship to Energy Balance, Atmospheric Dynamics, and Precipitation*, edited by: Heintzenberg, J., and Charlson, R. J., MIT Press, Cambridge, MA, 269-290, 2009.

Berndt, T., Stratmann, F., Sipilä, M., Vanhanen, J., T., P., Mikkilä, J., Grüner, A., Spindler, G., Lee Mauldin III, R., Curtius, J., Kulmala, M., and Heintzenberg, J.: Laboratory study on new particle formation from the reaction OH + SO₂: influence of experimental conditions, H₂O vapour, NH₃ and the amine tert-butylamine on the

overall process, *Atmos. Chem. Phys.*, 10, 7101-7116, [10.5194/acp-10-7101-2010](#), 2010.

Heintzenberg, J., and Birmili, W.: Aerosols over the Siberian forest: The ZOTTO project, *Journal of the Cryogenic Society of Japan*, 68, 5-8, 2010.

Ansmann, A., Petzold, A., Kandler, K., Tegen, I., Wendisch, M., Müller, D., Weinzierl, B., Müller, T., and Heintzenberg, J.: Saharan Mineral Dust Experiments SAMUM-1 and SAMUM-2: What have we learned?, *Tellus*, 63B, 403–429, 2011.

Heintzenberg, J., Birmili, W., Otto, R., Andreae, M. O., Mayer, J.-C., Chi, X., and Panov, A.: Aerosol particle number size distributions and particulate light absorption at the ZOTTO tall tower (Siberia), 2006–2009, *Atmos. Chem. Phys.*, 11, 8703-8871, 2011.

Heintzenberg, J., Hermann, M., Weigelt, A., Clarke, A., Kapustin, V., Anderson, B., Thornhill, K., Velthoven, P. v., Zahn, A., and Brenninkmeijer, C.: Near-Global Aerosol Mapping in the Upper Troposphere and Lowermost Stratosphere with Data from the CARIBIC Project, *Tellus*, 63B, 875-890, [10.1111/j.1600-0889.2011.00578.x](#), 2011.

Panov, A. V., Heintzenberg, J., Birmili, W., Otto, R., Chi, X., Zrazhevskaya, G. K., Timokhina, A. V., Verkhovets, S. V., Andrea, M., and Onuchin, A. A.: Sources, seasonal variability, and trajectories of atmospheric aerosols over central Siberian forest ecosystems, *Doklady Earth Sciences*, 441, 1710-1714, [10.1134/S1028334X1112018X](#), 2011.

Rickels, W., Klepper, G., Dovern, J., Betz, G., Brachatzek, N., Cacean, S., Güssow, K., Heintzenberg, J., Hiller, S., Hoose, C., Leisner, T., Oeschles, A., Platt, U., Proelß, A., Renn, O., Schäfer, S., and M., Z. r.: Large-Scale Intentional Interventions into the Climate System? Assessing the Climate Engineering Debate. Scoping report conducted on behalf of the German Federal Ministry of Education and Research (BMBF), Kiel Earth Institute, Kiel, 170 pp, 2011.

Bengtsson, L., Koumoutsaris, S., Bonnet, R.-M., Allan, R. P., Fröhlich, C., Heintzenberg, J., Ingmann, P., Kandel, R., Loeb, N., Soden, B., and Trenberth, K. E.: Observing and modeling Earth's energy flows. In: *Space Science Series of ISSI*, Springer, Dordrecht, 2012.

Ekman, A. M. L., Hermann, M., Groß, P., Heintzenberg, J., Kim, D., and Wang, C.: Sub-micrometer Aerosol Particles in the Upper Troposphere/Lowermost Stratosphere as Measured by CARIBIC and Modeled Using the MIT-CAM3 Global Climate Model, *J. Geophys. Res.*, 117, doi: [10.1029/2011JD016777](#), 2012.

Heintzenberg, J.: The aerosol-cloud-climate conundrum, *IJGW*, 4, 219-241, 2012.

Heintzenberg, J., and Leck, C.: The summer aerosol in the central Arctic 1991 - 2008: did it change or not?, *Atmos. Chem. Phys.*, 12, 3969-3983, 2012.

Chi, X., Winderlich, J., Mayer, J. C., Panov, A. V., Heimann, M., Birmili, W., Heintzenberg, J., Cheng, Y., and Andreae, M. O.: Long-term measurements of aerosols and carbon monoxide at the ZOTTO tall tower to characterize polluted and pristine air in the Siberian Taiga, *Atmos. Chem. Phys.*, 13, 12271-12298, [10.5194/acpd-13-18345-2013](#), 2013.

Heintzenberg, J., Birmili, W., Seifert, P., Panov, A., Chi, X., and Andreae, M. O.: Mapping the aerosol over Eurasia from the Zotino Tall Tower (ZOTTO), *Tellus B*, 65, doi:[http://dx.doi.org/10.3402/tellusb.v3465i3400.20062](#), 2013.

Karl, M., Leck, C., Coz, E., and Heintzenberg, J.: Marine nanogels as a source of

atmospheric nanoparticles in the high Arctic, *Geophysical Research Letters*, 40, 3738–3743, DOI: 10.1002/grl.50661, 2013.

Mann, G. W., Carslaw, K. S., Reddington, C. L., Pringle, K. J., Schulz, M., Asmi, A., Spracklen, D. V., Ridley, D. A., Woodhouse, M. T., Lee, L. A., Zhang, K., Ghan, S. J., Easter, R. C., Liu, X., Stier, P., Lee, Y. H., Adams, P. J., Tost, H., Lelieveld, J., Bauer, S. E., Tsigaridis, K., van Noije, T. P. C., Strunk, A., Vignati, E., Bellouin, N., Dalvi, M., Johnson, C. E., Bergman, T., Kokkola, H., von Salzen, K., Yu, F., Luo, G., Petzold, A., Heintzenberg, J., Clarke, A., Ogren, J. A., Gras, J., Baltensperger, U., Kaminski, U., Jennings, S. G., O'Dowd, C. D., Harrison, R. M., Beddows, D. C. S., Kulmala, M., Viisanen, Y., Ulevicius, V., Mihalopoulos, N., Zdimal, V., Fiebig, M., Hansson, H. C., Swietlicki, E., and Henzing, J. S.: Intercomparison and evaluation of global aerosol microphysical properties among AeroCom models of a range of complexity, *Atmos. Chem. Phys.*, 14, 4679–4713, 10.5194/acp-14-4679-2014, 2014.

Tjernström, M., Leck, C., Birch, C. E., Bottenheim, J. W., Brooks, B. J., Brooks, I. M., Bäcklin, L., Chang, R. Y.-W., Granath, E., Graus, M., Hansel, A., Heintzenberg, J., Held, A., Hind, A., Rosa, S. d. I., Johnston, P., Knulst, J., Westberg, M., Leeuw, G. d., Liberto, L. D., Martin, M., Matrai, P. A., Mauritsen, T., Müller, M., Norris, S. J., Orellana, M. V., Orsini, D. A., Paatero, J., Persson, P. O. G., Gao, Q., Rauschenberg, C., Ristovski, Z., Sedlar, J., Shupe, M. D., Sierau, B., Anders, Sirevaag, Sjögren, S., Stetzer, O., Swietlicki, E., Szczodrak, M., Vaattovaara, P., Wahlberg, N., and Wheeler, C. R.: The Arctic Summer Cloud-Ocean Study (ASCOS): Overview and experimental design, *Atmos. Chem. Phys.*, 14, 2823–2869, 2014.

Heintzenberg, J., Leck, C., and Tunved, P.: Potential source regions and processes of aerosol in the summer Arctic, *Atmos. Chem. Phys.*, 15, 6487–6502, 10.5194/acp-15-6487-2015, 2015.

Panov, A. V., Heintzenberg, J., Birmili, W., Seifert, P., Chi, X., Timokhina, A. V., and Andreae, M. O.: Spatial distribution of atmospheric aerosols over the territory of Eurasia in middle and high latitudes, *Geogr. Nat. Resour.*, 36, 25–30, 10.1134/S1875372815010047, 2015.

Heintzenberg, J., Cereceda-Balic, F., Vidal, V., and Leck, C.: Scavenging of black carbon in Chilean fogs, *Sci. Total Environ.*, 541, 341–347, 2016.

Hermann, M., Weigelt, A., Assmann, D., Pfeifer, S., Müller, T., Conrath, T., Voigtländer, J., Heintzenberg, J., Wiedensohler, A., Martinsson, B. G., Deshler, T., Brenninkmeijer, C. A. M., and Zahn, A.: An optical particle size spectrometer for aircraft-borne measurements in IAGOS-CARIBIC, *Atmos. Meas. Tech.*, 9, 2179–2194, 10.5194/amt-9-2179-2016, 2016.

Heintzenberg, J., Tunved, P., Gali, M., and Leck, C.: New particle formation in the Svalbard region 2006–2015, *Atmos. Chem. Phys.*, 17, 6153–6175, 10.5194/acp-2016-1073, 2017.

Heintzenberg, J., Senf, F., Birmili, W., and Wiedensohler, A.: Aerosol connections between distant continental stations, *Atmos. Environ.*, 190, 349–358, 2018.

Karl, M., Leck, C., Mashayekhy Rad, F., Bäcklund, A., Lopez-Aparicio, S., and Heintzenberg, J.: New insights in sources of the sub-micrometre aerosol at Mt. Zeppelin observatory (Spitsbergen) in the year 2015, *Tellus B*, 71, 1–29, 2019.

Wiedensohler, A., Ma, N., Birmili, W., Heintzenberg, J., Ditas, F., Andreae, M. O.,

and Panov, A.: Infrequent new particle formation over the remote boreal forest of Siberia, *Atmos. Environ.*, 200, 167-169, <https://doi.org/10.1016/j.atmosenv.2018.12.013>, 2019.

Heintzenberg, J., Birmili, W., Hellack, B., Spindler, G., Tuch, T., and Wiedensohler, A.: Aerosol pollution maps and trends over Germany with hourly data at four rural background stations from 2009 to 2018, *Atmos. Chem. Phys.*, 20, 10967-10984, <https://doi.org/10.5194/acp-20-10967-2020>, 2020.

Bulatovic, I., Igel, A. L., Leck, C., Heintzenberg, J., Riipinen, I., and Ekman, A. M. L.: The importance of Aitken mode aerosol particles for cloud sustenance in the summertime high Arctic: A simulation study supported by observational data, *Atmos. Chem. Phys.*, 2020, 1-28, [10.5194/acp-2020-665](https://doi.org/10.5194/acp-2020-665), 2021.

Platt, S. M., Hov, Ø., Berg, T., Breivik, K., Eckhardt, S., Eleftheriadis, K., Evangeliou, N., Fiebig, M., Fisher, R., Hansen, G., Hansson, H. C., Heintzenberg, J., Hermansen, O., Heslin-Rees, D., Holmén, K., Hudson, S., Kallenborn, R., Krejci, R., Krognes, T., Larssen, S., Lowry, D., Lund Myhre, C., Lunder, C., Nisbet, E., Nizetto, P. B., Park, K. T., Pedersen, C. A., Aspmo Pfaffhuber, K., Röckmann, T., Schmidbauer, N., Solberg, S., Stohl, A., Ström, J., Svendby, T., Tunved, P., Tørnkvist, K., van der Veen, C., Vratolis, S., Yoon, Y. J., Yttri, K. E., Zieger, P., Aas, W., and Tørseth, K.: Atmospheric composition in the European Arctic and 30 years of the Zeppelin Observatory, Ny-Ålesund, *Atmos. Chem. Phys.*, 22, 3321-3369, [10.5194/acp-22-3321-2022](https://doi.org/10.5194/acp-22-3321-2022), 2021.

Artaxo, P., Hansson, H.-C., Andreae, M.O., Bäck, J., Alves, E.G., Barbosa, H.M.J., Bender, F., Bourtsoukidis, E., Carbone, S., Chi, J., Decesari, S., Després, V.R., Ditas, F., Ezhova, E., Fuzzi, S., Hasselquist, N.J., Heintzenberg, J., Holanda, B.A., Guenther, A., Hakola, H., Heikkinen, L., Kerminen, V.-M., Kontkanen, J., Krejci, R., Kulmala, M., Lavric, J.V., de Leeuw, G., Lehtipalo, K., Machado, L.A.T., McFiggans, G., Franco, M.A.M., Meller, B.B., Morais, F.G., Mohr, C., Morgan, W., Nilsson, M.B., Peichl, M., Petäjä, T., Praß, M., Pöhlker, C., Pöhlker, M.L., Pöschl, U., Von Randow, C., Riipinen, I., Rinne, J., Rizzo, L.V., Rosenfeld, D., Silva Dias, M.A.F., Sogacheva, L., Stier, P., Swietlicki, E., Sörgel, M., Tunved, P., Virkkula, A., Wang, J., Weber, B., Yáñez-Serrano, A.M., Zieger, P., Mikhailov, E., Smith, J.N. and Kesselmeier, J.: Tropical and Boreal Forest – Atmosphere Interactions: A Review, *Tellus B*, 74, 24-163, <http://doi.org/10.16993/tellusb.34>, 2022.

Becagli, S., Barbaro, E., Bonamano, S., Caiazzo, L., di Sarra, A., Feltracco, M., Grigioni, P., Heintzenberg, J., Lazzara, L., Legrand, M., Madonia, A., Marcelli, M., Melillo, C., Meloni, D., Nuccio, C., Pace, G., Park, K. T., Preunkert, S., Severi, M., Vecchiato, M., Zangrando, R., and Traversi, R.: Factors controlling atmospheric DMS and its oxidation products (MSA and nssSO₄²⁻) in the aerosol at Terra Nova Bay, Antarctica, *Atmos. Chem. Phys.*, 22, 9245–9263, <https://doi.org/10.5194/acp-22-9245-2022>, 2022.

Heintzenberg, J., Legrand, M., Gao, Y., Hara, K., Huang, S., Humphries, R. S., Kamra, A. K., Keywood, M. D., and Sakerin, S. M.: Spatio-Temporal Distributions of the Natural Non-Sea-Salt Aerosol Over the Southern Ocean and Coastal Antarctica and Its Potential Source Regions, *Tellus B*, [10.16993/tellusb.1869](https://doi.org/10.16993/tellusb.1869), 2023.