APPENDIX G

Peer-Reviewed Publications by Research Area

Publications Citation Analysis

Appendix G: Peer-Reviewed Publications, by Research Area

A. Air Quality and Related Health Research: Particulate Matter, Ozone and, Co-Pollutants

1999

Identifying pollution source regions using multiply-censored data. E. Brankov, S.T. Rao, and P.S. Porter. *Environmental Science & Technology* 33: 2273-2277, 1999.

The role of vertical mixing in the temporal evolution of ground-level ozone concentrations. J. Zhang and S.T. Rao. *Journal of Applied Meteorology* 38: 1674-1691, 1999.

Spatial and temporal variation in the mixing depth over the northeastern United States during the summer of 1995. S. Berman, J.-Y. Ku, and S.T. Rao. *Journal of Applied Meteorology* 38: 1661-1673, 1999.

2000

Airway and cardiovascular effects of inhaled ultrafine carbon particles in resting, healthy, nonsmoking adults. J.A. Boscia, D. Chalupa, M.J. Utell, W. Zareba, J.A. Konecki, P.E. Morrow, F.R. Gibb, G. Oberdörster, M. Azadniv, L.M. Frasier, D.M. Speers, and M.W. Frampton. *American Journal of Respiratory and Critical Care Medicine* 161: A239 (Abstract), 2000.

Characterizing PM 2.5 Emission Profiles for Stationary Sources: Comparison of Traditional and Dilution Sampling. G. England, B. Zielinska, and K. Loos. *Fuel Processing Technology* 65: 177-188, 2000.

Deposition of inhaled ultrafine carbon particles in resting healthy nonsmoking adults. M.W. Frampton, D. Chalupa, P.E. Morrow, F.R. Gibb, G. Oberdörster, J. Boscia, D.M. Speers, and M.J. Utell. *American Journal of Respiratory and Critical Care Medicine* 161: A257 (Abstract), 2000.

Development of a sample equilibration system for the TEOM continuous PM monitor. M.B. Meyer, H. Patashnick, J.L. Ambs, and E. Rupprecht. *Journal of the Air and Waste Mangement Association* 50: 1345-1349, 2000.

Effects of changes in data reporting practices on trend assessments. Henry, Rao, Zurbenko, and Porter. *Atmospheric Environment* 34: 2659-2662, 2000.

The effects of land use in meteorological modeling: implications for assessment of future air quality scenarios. Civerolo, Sistla, Rao, and Nowak. *Atmospheric Environment* 34: 1615-1621, 2000.

How should the photochemical modeling systems be used in guiding emissions management decisions? S.T. Rao, C. Hogrefe, H. Mao, J. Biswas, I. G. Zurbenko, P. S. Porter, P. Kasibhatla, and D. A. Hansen. In: *Air Pollution Modeling and Its Application XIV*, eds. S.E. Gryning and F. Schiermeier, pp. 25-34. New York: Kluwer Academic/Plenum, 2000.

Interpreting the information in ozone observations and model predictions relevant to regulatory policies in the eastern United States. C. Hogrefe, S.T. Rao, I.G. Zurbenko, and P.S. Porter. *Bulletin of the American Meteorological Society* 81: 2083-2106, 2000.

2001

Assessing the Impact of the Acid Deposition Control Program. K.L. Civerolo, E. Brankov, S.T. Rao, and I.G. Zurbenko. *Atmospheric Environment* 35: 4135-4148, 2001.

Blood leukocyte expression of LFA-1 and ICAM-1 after inhalation of ultrafine carbon particles. M.W. Frampton, M. Azadniv, D. Chalupa, P.E. Morrow, F.R. Gibb, G. Oberdörster, J. Boscia, and D.M. Speers. *American Journal of Respiratory and Critical Care Medicine* 163: A264 (Abstract), 2001.

A comparison of measured and simulated ozone concentrations in the rural areas of the eastern United States. G. Sistla, K. Civerolo, W. Hao, and S.T. Rao. *Journal of the Air and Waste Management Association* 51: 374-386, 2001.

Demonstrating Attainment of the Air Quality Standards: Integration of Observations and Model Predictions into the Probabilistic Framework. Hogrefe and Rao. *Journal of the Air & Waste Management Association* 51, 1060-1072, 2001.

Development of a reference standard for particulate matter mass in ambient air. H. Patashnick, G. Rupprecht, J.L. Ambs, and M.B. Meyer. *Aerosol Science and Technology* 34: 42-45, 2001.

Do We Understand Trends in Atmospheric Sulfur Species? Reid, Misra, Bloxam, Yap, Rao, Civerolo, Brankov, Mohapl, and Vet. *Journal of the Air & Waste Management Association* 51: 1561-1567, 2001.

Evaluating the performance of regional-scale photochemical modeling systems: Part I—Meteorological predictions. C. Hogrefe, S.T. Rao, R. Kasibhatla, G. Kallos, C.J. Tremback, W. Hao, D. Olerud, A. Xiu, J. McHenry, and K. Alapaty. *Atmopheric Environment* 35: 4159-4174, 2001.

Numerical Investigation of Boundary-Layer Evolution and Nocturnal Low-Level Jets: Local versus Non-Local PBL Schemes. Zhang, Mao, Civerolo, Berman, Ku,

Rao, Doddridge, Philbrick, and Clark. *Environmental Fluid Mechanics* 1: 171-208, 2001.

Numerical Investigation of the Effects of Boundary-Layer Evolution on the Predictions of Ozone and the Efficacy of Emission Control Options in the Northeastern United States. Ku, Mao, Zhang, Civerolo, Rao, Philbrick, Doddridge, and Clark. *Environmental Fluid Mechanics* 1: 209-233, 2001.

An operational evaluation of two regional-scale ozone air quality modeling systems over the eastern United States. G. Sistla, W. Hao, J.-Y. Ku, G. Kallos, K. Zhang, H. Mao, and S. T. Rao. *Bulletin of the American Meteorological Society* 82: 945-964, 2001.

Ozone air quality over North America: Part II—An analysis of trend detection and attribution techniques. P.S. Porter, S. T. Rao, I. G. Zurbenko, A. Dunker, and G. Wolff. *Journal of the Air & Waste Management Association* 51: 283-306, 2001.

Space-time analysis of precipitation-weighted sulfate concentrations over the eastern US. Civerolo and Rao. *Atmospheric Environment* 35: 5657-5661, 2001.

Systemic and cardiovascular effects of airway injury and inflammation: Ultrafine particle exposure in humans. M.W. Frampton. *Environmental Health Perspectives* 109(Suppl. 4): 529-532, 2001.

Uncertainties in episodic ozone modeling stemming from uncertainties in the meteorological fields. J. Biswas and S.T. Rao. *Journal of Applied Meteorology* 40: 117-136, 2001b.

2002

A facility for controlled human exposures to ultrafine particles. D.F. Chalupa, F.R. Gibb, P.E. Morrow, G. Oberdörster, E. Riesenfeld, R. Gelein, M.J. Utell, and M.W. Frampton. In: *Crucial Issues in Inhalation Research - Mechanistic. Clinical and Epidemiologic*, eds. U. Heinrich and U. Mohr, pp. 241-253. Stuttgart, Germany: INIS Monographs, Fraunhofer IRB Verlag, 2002.

An approach for the aggregation of aerodynamic surface parameters in calculating the turbulent fluxes over heterogeneous surfaces in atmospheric models. D.T. Mihailovic, S.T. Rao, C. Hogrefe, and R. Clark. *Environmental Fluid Mechanics* 2: 315-337, 2002.

An evaluation of the UAM-V predicted concentrations of carbon monoxide and reactive nitrogen compounds over the eastern United States during Summer 1995. C. Sistla, K.L. Civerolo, W. Hao, and S.T. Rao. *Journal of the Air & Waste Management Association* 52: 1324-1332, 2002.

An Examination of the 6:00 a.m. - 9:00 a.m. Measurements of Ozone Precursors in the New York City Metropolitan Area. Sistla, Zalewsky, and Henry. *Journal of the Air & Waste Management Association* 52: 181-188, 2002.

Boundary layer evolution and its influence on ground-level ozone concentrations. G.A. Athanassiadis, S.T. Rao, J.-Y. Ku, and R.D. Clark. *Environmental Fluid Mechanics* 2: 339-357, 2002.

Cardiovascular effects associated with air pollution: potential mechanisms and methods of testing. M.J. Utell, M.W. Frampton, W. Zareba, R.B. Devlin, W.E. Cascio. *Inhalation Toxicology* 14(12): 1231-1247, 2002.

Deposition of ultrafine carbon particles in subjects with asthma. D.C. Chalupa, P.E. Morrow, B. Oberdörster, D. Speers, D. Daigle, M.J. Utell, and M.W. Frampton. *American Journal of Respiratory and Critical Care Medicine* 165: A829 (Abstract), 2002.

Inhalation of ultrafine particles alters myocardial repolarization in humans. M.W. Frampton, W. Zareba, C.C. Daigle, G. Oberdörster, M.F. Utell. *American Journal of Respiratory and Critical Care Medicine* 165: (Abstract), 2002.

Ultrafine particle exposure alters expression of CD40 ligand (CD154) in healthy subjects and subjects with asthma. C.C. Daigle, D.M. Speers, D. Chalupa, J.C. Stewart, L.M. Frasier, M. Azadniv, R.P. Phipps, M.J. Utell, and M.W. Frampton. *American Journal of Respiratory and Critical Care Medicine* 165: A214 (Abstract), 2002.

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The airshed for ozone and fine particulate pollution in the eastern United States. K. Civerolo, H. Mao, and S. T. Rao. *Pure and Applied Geophysics*. 160: 81-105, 2003.

Application of receptor modeling to atmospheric constituents at Potsdam and Stockton, NY. W. Liu, P. Hopke, Y. Han, S. Yi, T. Holsen, S, Cybart, K. Kozlowski, and M. Milligan. *Atmospheric Environment* 37: 4997-5007, 2003.

A comparison of four techniques for separating different time scales in atmospheric variables. C. Hogrefe, S. Vempaty, S. T. Rao, and P. S. Porter. *Atmospheric Environment* 37: 313-325, 2003.

Evaluating the performance of regional-scale meteorological models: effect of clouds simulation on temperature prediction. G. Liu, C. Hogrefe, and S. T. Rao. *Atmospheric Environment* 37: 1425-1433, 2003.

HOx concentrations and OH reactivity observations in New York City during PMTACS-NY 2001. X. Ren, H. Harder, M. Martinez, R.L. Lesher, A. Oliger, T. Shirley, J. Adams, J. B. Simpas, and W.H. Brune *Atmospheric Environment* 37: 3627-3637, 2003.

Intercomparison and Evaluation of Four Semi-continuous PM-2.5 Sulfate Instruments. F. Drewnick, J. J. Schwab, O. Hogrefe, S. Peters, L. Husain, D. Diamond, R. Weber, and K. L. Demerjian. *Atmospheric Environment* 37: 3335-3350, 2003.

Measured Summertime Concentrations of Particulate Components, Hg0, and Speciated Polycyclic Aromatic Hydrocarbons at Rural Sites in New York State. P. Hopke, W. Liu, Y. Han, S. Yi, T. Holsen, S. Cybart, and M. Milligan. *Environmental Pollution* 123: 413-425, 2003.

Measurements of gaseous HONO, HNO3, SO2, HCl, NH3, particulate sulfate and PM2.5 in New York, NY. A. Bari, V. Ferraro, L. Wilson, D. Luttinger, and L. Husain. *Atmospheric Environment* 37: 2825-2835, 2003.

Measurements of ion concentration in gasoline and diesel engine exhaust. F. Yu, T. Lanni, and B. Frank, *Atmospheric Environment* 38(10): 1417-1423, 2003.

Nitric acid photolysis on surfaces in low-NOX environments: Significant atmospheric implications. X. Zhou, H. Gao, Y. He, G. Hung, S.B. Bertman, K. Civerolo, and J. Schwab. *Geophysical Research Letters* 30(23): 2003.

OH and HO2 chemistry in the urban atmosphere of New York City. X. Ren, H. Harder, M. Martinez, R.L. Lesher, A. Oliger, J. B. Simpas, W.H. Brune, J. J. Schwab, K.L. Demerjian, Y. He, X. Zhou, and H. Gao. *Atmospheric Environment* 37: 3639-3651, 2003.

Probabilistic Assessment of Regional Scale Ozone Pollution in the Eastern United States. E.C. Gego, C. Hogrefe, S. T. Rao, and P. S. Porter. In: *NATO Science Series IV: Earth and Environmental Sciences Vol. 30: Air Pollution Processes in Regional Scale*, eds. D. Melas and D. Syrakov. Dordrecht: Kluwer Academic Publishers, 2003.

Regional sources of particulate sulfate, SO2, PM2.5, HCl, and HNO3, in New York, NY. A. Bari, V. Dutkiewicz, C. Judd, L. Wislon, D. Luttinger, and L. Husain. *Atmospheric Environment* 37: 2837-2844, 2003.

Spatial and temportal variations in the trace elemental data over the northeastern United States. G.G. Athanassiadis and S.T. Rao. *Environmental Pollution* 123: 439-449, 2003.

Summertime Characteristics of the Atmospheric Boundary Layer and Relationships to Ozone Levels over the Eastern United States. S. Trivikrama Rao, J.-Y. Ku, S. Berman, K. Zhang, and H. Mao. *Pure and Applied Geophysics* 160: 21-55, 2003.

Ultrafine particle deposition in humans during rest and exercise. C.C. Daigle, D.C. Chalupa, F.R. Gibb, P.E. Morrow, G. Oberdörster, M.J. Utell, M.W. Frampton. *Inhalation Toxicology* 15(6): 539-552, 2003.

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Aerosol chemical composition in New York state from integrated filter samples: Urban/rural and seasonal contrasts. J.J. Schwab, H.D. Felton, and K.L. Demerjian. *Journal of Geophysical Research* 109(D16): 2004.

Characteristics of Nucleation and Growth Events of Ultrafine Particles Measured in Rochester, NY. C. Jeong , P. Hopke, D. Chalupa, and M. Utell. *Environmental Science and Technology* 38: 1933-1940, 2004.

Chase Studies of Particulate Emissions from in-use New York City Vehicles. M.J. Canagaratna, J. T. Jayne, D. Ghertner, S. Herndon, Q. Shi, J. L. Jimenez , P.J. Silva, P. Williams, T. Lanni, F. Drewnick, K. L. Demerjian, C. Kolb, and D. Worsnop, *Aerosol Science & Technology* 38: 555-573, 2004.

Comparison of two trajectory based models for locating particle sources for two rural New York sites. L. Zhou, P. Hopke, and W. Liu. *Atmospheric Environment* 38: 1955-1963, 2004.

Development, Operation and Applications of an Aerosol Generation, Calibration and Research Facility, New Instruments and Data Inversion Methods. O. Hogrefe, F. Drewnick, G. Lala, J. Schwab, and K. Demerjian. *Aerosol Science & Technology* 38(SI): 196-214, 2004.

Field assessment of the dynamics of the particulate nitrate vaporization usingdifferential TEOM and automated nitrate monitors. S. Hering, P.M. Fine, C. Sioutas, P.A. Jacques, J.L. Ambs, O. Hogrefe, and K.L. Demerjian. *Atmospheric Environment* 38: 5183-5192, 2004.

Field evaluation of the differential TEOM monitor for continuous PM2.5 mass concentrations. P.A. Jaques, J.L. Ambs, W.L. Grant, and C. Sioutas. *Aerosol Science and Technology* 38(S1): 49-59, 2004.

Improving source identification of fine particles in a rural northeastern U.S. area utilizing temperature-resolved carbon fractions. E. Kim and P.K. Hopke. *Journal of Geophysical Research* 109(D9): 2004.

Laboratory characterization of modified Tapered Element Oscillating Microbalance samplers. J.J. Schwab, O. Hogrefe, K.L. Demerjian, and J.L. Ambs. *Journal of the Air & Waste Management Association* 54: 1254-1263, 2004.

Long-term field characterization of Tapered Element Oscillating Microbalance and modified Tapered Element Oscillating Microbalance samplers in urban and rural New York State locations. J.J. Schwab, J. Spicer, K.L. Demerjian, J.L. Ambs, and H.D. Felton, *Journal of the Air & Waste Management Association* 54: 1264-1280, 2004.

Measurement of Ambient Aerosol Composition during the PMTACS-NY 2001 Campaign Using an Aerosol Mass Spectrometer - Part I: Mass Concentrations. F. Drewnick, J. Schwab, J. Jayne, M. Canagaratna, D. Worsnop, and K. Demerjian. *Aerosol Science & Technology* 38(SI): 92-103, 2004.

Measurement of Ambient Aerosol Composition during the PMTACS-NY 2001 Campaign Using an Aerosol Mass Spectrometer - Part II: Chemically Speciated Mass Distributions. F. Drewnick, J. Jayne, M. Canagaratna, D. Worsnop, and K. Demerjian. *Aerosol Science & Technology* 38(SI): 104-117, 2004.

Measurement of ultrafine particle size distributions from coal-, oil-, and gas-fired stationary combustion sources. O.-M. C. Chang, J.C. Chow, J.G. Watson, P.K. Hopke, S.M. Yi, and G.C. England. *Journal of the Air & Waste Management Association* 54: 1494-1505, 2004.

Measurements of formaldehyde, nitrogen dioxide, and sulfur dioxide at Whiteface Mountain using a dual tunable diode laser system. Y.Q. Li, K.L. Demerjian, M.S. Zahniser, D.D. Nelson, J.B. McManus, and S.C. Herndon. *Journal of Geophysical Research* 109(D16): 2004.

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NO and NO2 Emissions Ratios Measured from in use Commercial Aircraft during Taxi and Take-Off. S.C. Herndon, J.H. Shorter, M.S. Zahniser, D.D. Nelson, J.T. Jayne, R.C. Brown, R.C.Miake-Lye, I.A. Waitz, P. Silva, T. Lanni, K.L. Demerjian, and C. E. Kolb. *Environmental Science and Technology* 38: 6078-6084, 2004.

Parameterization of albedo over heterogeneous surfaces in coupled land-atmosphere schemes for environmental modeling. Part I: Theoretical background. D.T. Mihailovic, D. Kapor, C. Hogrefe , J. Lazic, and T. Tosic. *Environmental Fluid Mechanics* 4: 57-77, 2004.

Semi-continuous PM2.5 sulfate and nitrate measurements at an urban and a rural location in New York: PMTACS-NY Summer 2001 and 2002 campaigns. O. Hogrefe, J. Schwab, F. Drewnick, K. Rhoads, G.G. Lala, H.D. Felton, O.V. Rattigan, L. Husain, V.A. Dutkiewicz, S. Peters, and K.L. Demerjian. *Journal of the Air & Waste Management Association* 54: 1040-1060, 2004.

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Comparison between back-trajectory based modeling and Lagrangian backward dispersion modeling for locating sources of reactive gaseous mercury. J. Han, T. Holsen, P. Hopke, and S. Yi. *Environmental Science & Technology* 39: 1715-1723, 2005.

Examination of model predictions at different horizontal grid resolutions. E. Gego, C. Hogrefe, G. Kallos, A. Voudouri, J. Irwin, and S.T. Rao. *Environmental Fluid Mechanics* 5(1-2): 63-85, 2005.

A New Time-of-Flight Aerosol Mass Spectrometer (TOF-AMS) – Instrument Description and First Field Deployment. F. Drewnick, S.S. Hings, P. DeCarlo, J.T. Jayne, M. Gonin, K. Fuhrer, S. Weimer, J.L. Jimenez, K.L. Demerjian, S. Borrmann, and D.R. Worsnop. *Aerosol Science and Technology* 39: 637-658, 2005.

Performance evaluation of continuous PM2.5 mass concentration monitors. J.H. Lee, P.K. Hopke, T.M. Holsen, D.-W. Lee, P.A. Jaques, C. Sioutas, and J.L. Ambs. *Aerosol Science and Technology* 36: 95-109, 2005.

PM source apportionment and health effects: 1. Intercomparison of source apportionment results. P.K. Hopke, K. Ito, T. Mar, W.F. Christensen, D.J. Eatough, R.C. Henry, E. Kim, F. Laden, R. Lall, T.V. Larson, H. Liu, L. Neas, J. Pinto, M. Stolzel, H. Suh, P. Paatero, and G.D. Thurston. *Journal of Exposure Analysis and Environmental Epidemiology* 16: 275-286, 2006; advance online publication: October 2005.

PM source apportionment and health effects: 2. An investigation of intermethod variability in associations between source-apportioned fine particle mass and daily mortality in Washington, DC. K. Ito, W.F. Christensen, D.J. Eatough, R.C. Henry, E. Kim, F. Laden, R. Lall, T.V. Larson, L. Neas, P.K. Hopke, and G.D. Thurston. *Journal*

of Exposure Analysis and Environmental Epidemiology 16: 300-310, 2006; advance online publication: November 2005.

PM source apportionment and health effects: 3. Investigation of intermethod variations in associations between estimated source contributions of $PM_{2.5}$ and daily mortality in Phoenix, AZ. T.F. Mar, K. Ito, J.Q. Koenig, T.V. Larson, D.J. Eatough, R.C. Henry, E. Kim, F. Laden, R. Lall, L. Neas, M. Stolzel, P. Paatero, P.K. Hopke, and G.D. Thurston. *Journal of Exposure Analysis and Environmental Epidemiology* 16: 311-320, 2006; advance online publication: November 2005.

Quasi-unary homogeneous nucleation of H2SO4-H2O. F. Yu. *Journal of Chemical Physics* 122(7): 2005.

Real-time Measurements of Nitrogen Oxide Emissions from In-use New York City Transit Buses using a Chase Vehicle. J.J. Shorter, S.C. Herndon, M. S. Zahniser, D.D. Nelson, J. Wormhoudt, K.L. Demerjian, and C.E. Kolb. *Environmental Science and Technology* 39: 7991-8000, 2005.

Real-time Measurements of SO2, H2CO and CH4 Emissions from in-use Curbside Passenger Buses in New York City using a Chase Vehicle. S.C. Herndon, J.H. Shorter, M.S. Zahniser, J. Wormhoudt, D.D. Nelson, K.L. Demerjian, and C.E. Kolb. *Environmental Science and Technology* 39: 7984-7990, 2005.

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An Intercomparison of Measurement Methods for Carbonaceous Aerosol in the Ambient Air in New York City. P. Venkatachari, L. Zhou, P.K. Hopke, J.J. Schwab, K.L. Demerjian, O. Hogrefe, D. Felton, and O. Rattigan. *Aerosol Science and Technology* 40(SI): 798-795, 2006.

An ion chromatographic analysis of water-soluble, short-chain organic acids in ambient particulate matter. R.S. Raman and P.K. Hopke. *International Journal of Environmental and Analytical Chemistry* 86(10): 767-777, 2006.

Influence of atmospheric dispersion and new particle formation events on ambient particle number concentration in Rochester, United States, and Toronto, Canada. C.-H. Jeong, G.J. Evans, P.K. Hopke, D. Chalupa, and M.J. Utell. *Journal of the Air and Waste Management Association* 56: 431-443, 2006.

New York State Urban and Rural Measurements of Continuous PM2.5 Mass by FDMS TEOM and BAM. J.J. Schwab, H.D. Felton, O.V. Rattigan, and K.L. Demerjian. *Journal of the Air and Waste Management Association* 56: 372-383, 2006.

OH, HO_2 and OH Reactivity during the PMTACS–NY Whiteface Mountain 2002 Campaign: Observations and Model Comparison. X. Ren, William H. Brune, A. Oliger, A.R. Metcalf, J.B. Simpas, T. Shirley, J.J. Schwab, C. Bai, U. Roychowdhury, Y. Li, C. Cai, K.L. Demerjian, Y. He, X. Zhou, H. Gao, and J. Hou. *Journal of Geophysical Research* 111(D10): 2006.

In Preparation

Characterization of PM2.5 mass and chemical speciation behavior from Natural Gas and residual Oil in dilution Sampler. M. Chang, G. England, J. Watson, and J. Chow. To be submitted to *Journal of the Air and Waste Management Association*. In preparation.

Comparison of the space-time signatures of air quality data from different monitoring networks. E. Gego, C. Hogrefe, P. Porter, J. Irwin, and S.T. Rao. To be submitted to *Pure Applied Geophysics*. In preparation.

Relation between Δ17O and δ18O in atmospheric NO3: Implications for δ15N values calculated from NO3 when converted to N2O. S.D. Wankel, E.M. Elliott, and C. Kendall. In preparation.

Seasonal variation of 2-methyltetrols in ambient PM2.5 samples. X. Xia and P.K. Hopke. In preparation.

In Review

Advances in Continuous Measurement Methods for PM-2.5 Mass: Part 1. Laboratory Studies of a 30C TEOM with Nafion Dryer and of a Self-correcting TEOM with Electrostatic Precipitator. J. Schwab, J. Ambs, O. Hogrefe, and K. Demerjian. Submitted to *Journal of the Air and Waste Management Association*, January 2003; reviewers comments received and revisions submitted December 2003.

Advances in Measurement Methods for PM-2.5 Mass: Part 2. Field Evaluations of the 30C TEOM Monitor with Nafion Dryer in Rural and Urban Locations, and Comparisons with 50C TEOM Monitor and FRM 24 Hour Integrated Filters. J. Schwab, J. Ambs, J. Spicer, D. Felton, and K. Demerjian. Submitted to *Journal of the Air and Waste Management Association*, January 2003; reviewers comments received and revisions submitted December 2003.

Behavior of OH and HO2 in the Winter Atmosphere in New York City. X. Ren, W.H. Brune, J. M., M. J. Mitchell, R.L. Lesher, A.R. Metcalf, J. B. Simpas, J. J. Schwab, K. L. Demerjian, H.D. Felton, G. Boynton, Y. He, X. Zhou, and J. Hou. Submitted to Special Issue: *Atmospheric Environment*. In review.

Elemental Composition of PM2.5 Aerosols in Queens, New York: Evaluation of Sources of Fine- Particle Mass. V.A. Dutkiewicz, S. Qureshi, L. Husain, J. J. Schwab, and K. L. Demerjian. Submitted to Special Issue: *Atmospheric Environment*.

Elemental Composition of PM2.5 Aerosols in Queens, New York: Solubility and Temporal trends. S. Qureshi, V. A. Dutkiewicz, K. Swami, K. X. Yang, L. Husain, J. J. Schwab, and K. L. Demerjian. Submitted to Special Issue: *Atmospheric Environment*.

Field test data for 42 liter per minute PM2.5 aerosol sampler used to collect 6-hr aerosols samples during the PMTACS-NY Intensives held at Queens College, Queens, NY. V.A. Dutkiewicz, S. Qureshi, A.R. Khan, L. Husain, J.J. Schwab, and K.L. Demerjian. Submitted to Special Issue: *Atmospheric Environment*. In review.

An Isotopic Tracer of Stationary Source NOx Emissions Across the Northeastern United States. E.M. Elliott, C. Kendall, E.W. Boyer, D.A. Burns, S.D. Wankel, D.J. Bain, K. Harlin, T.J. Butler, and R. Carlton. In internal USGS review.

Multi-year Urban and Rural Semi-continuous PM2.5 Sulfate and Nitrate Measurements in New York State: Evaluation and Comparison with Filter Based Measurements. O.V. Rattigan, O. Hogrefe, H.D. Felton, J. J. Schwab, U. K. Roychowdhury, and K. L. Demerjian. Submitted to Special Issue: *Atmospheric Environment*, 2006. In review.

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Use of new water ratios and surface saturated area estimates to test TOPMODEL. Inamdar, Mitchell, McDonnell, and McHale. In review.

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C. Research Needs Crosscutting the Topics of Air Quality, Health, and Ecosystem Response

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Appendix G: EMEP Citations Analysis for 1999 to 2005

Program activities resulted in the publication of 138 papers. A citations analysis conducted by Thomson Scientific in 2006 found 98 papers in their citations database. The distribution of these papers by publication year is shown in Figure 1. These papers were cited in peer-reviewed journals 655 times between 1999 and 2005. The cumulative number of citations is shown in Figure 2.

Figure 1

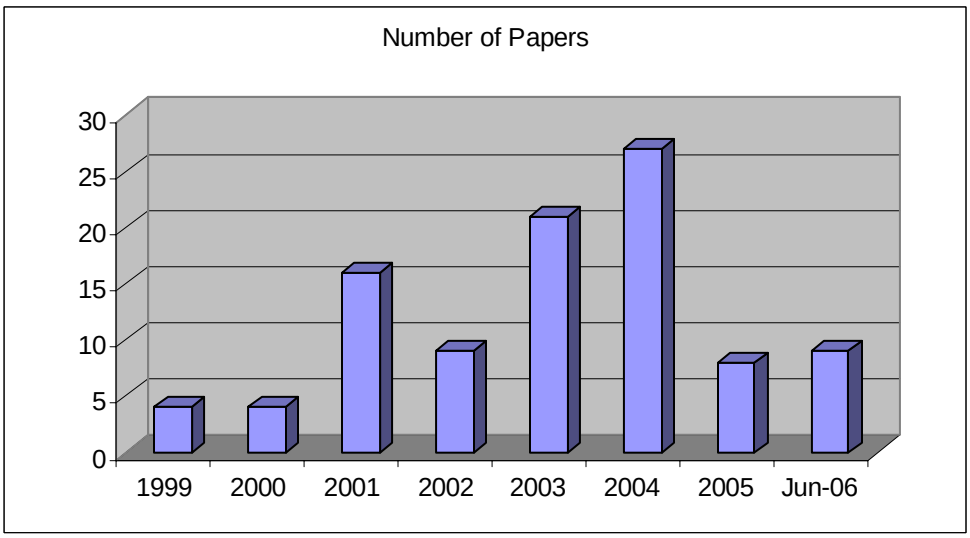

Figure 2

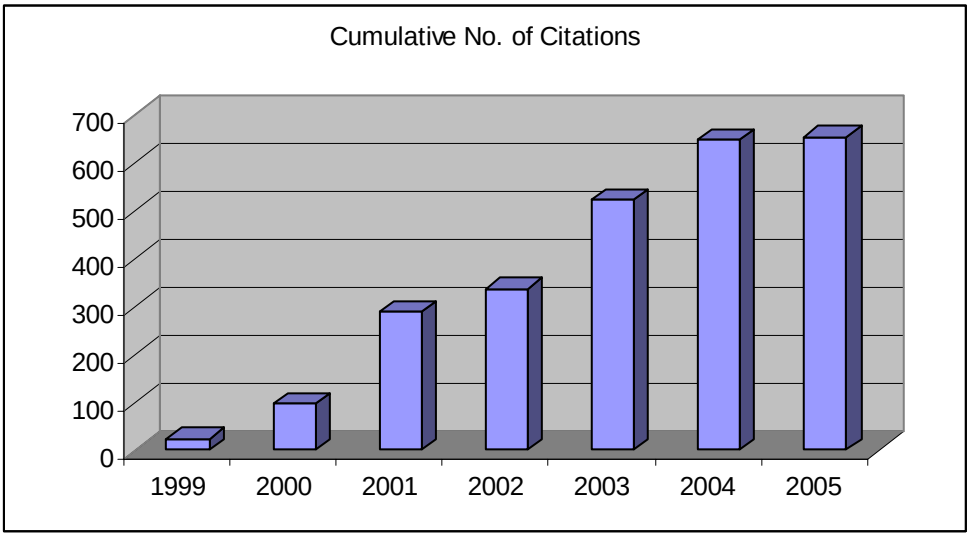

Table 1 presents the list of organizations represented in the 98 papers. Table 2 presents the list of journals and Table 3 lists the 14 countries represented.

Table 1. Organizations Represented in the 98 Papers

Acad Sinica	Meteorol Serv Canada	TAMS Consultants Inc
Aerodyne Res Inc	Mission Res Corp	TOFWERK AG
Aerosol Dynam Inc	N Carolina Supercomp Ctr	Tokyo Univ Agr & Technol
Alabama A&M Univ	New York State Adirondack Lakes Survey Corp	Univ Albany
Amer Petr Inst	New York State Dept Environm Conservat	Univ Athens
Arizona State Univ	New York State Dept Hlth	Univ Calif Berkeley
Boston Univ	NOAA	Univ Calif Los Angeles
Brigham Young Univ	Norwegian Meteorol Inst	Univ Colorado
Bur Air Qual Surveillance	NYS Dept Environm Conservat	Univ Florida
Bur Air Res	NYSDEC	Univ Helsinki
CESTM	NYU	Univ Idaho
Clarkson Univ	Ontario Minist Environm	Univ Louisville
Ctr Ecosyst	Oregon State Univ	Univ Maine
Ctr Environm Med & Lung Biol	Penn State Univ	Univ Manchester
Dept Chem & Biochem	Rupprecht & Patashinck Co Inc	Univ Maryland
Dept Environm Conservat	Rupprecht & Patashnick Co Inc	Univ N Carolina
Desert Res Inst	Seoul Natl Univ	Univ New Hampshire
Duke Univ	Shippensburg Univ	Univ Novi Sad
E&S Environm Chem Inc	Siena Coll	Univ Puerto Rico Rio Piedras
Exxon Res & Engn Co	SRKR Engn Coll	Univ Rochester
GE Energy & Environm Res Corp	State Univ New York	Univ So Calif
Georgia Inst Technol	SUNY Albany	Univ Toronto
GM Corp	SUNY Coll Buffalo	Univ Washington
GSF	SUNY Coll Cortland	US EPA
Harvard Univ	SUNY Coll Environm Sci & Forestry	US EPA
Hokkaido Univ	SUNY Coll Fredonia	US Forest Serv
Hubbard Brook Res Fdn	SUNY Coll Oneonta	US Geol Survey
Inst Ecosyst Studies	SUNY Coll Oswego	USDA Forest Serv
Kinki Univ	SUNY ESF	W Virginia Univ
Kyoto Univ	SUNY Syracuse	
Max Planck Inst Chem	Syracuse Univ	

Table 2. List of Journals Where Papers Appeared

Journal	Papers	No. of Citations
ATMOS ENVIRON	23	137
J AIR WASTE MANAGE	9	32
J GEOPHYS RES-ATMOS	8	11
AEROSOL SCI TECH	7	82
ENVIRON SCI TECHNOL	7	62
HYDROL PROCESS	6	26
ENVIRON POLLUT	5	26
WATER AIR SOIL POLL	4	23
J APPL METEOROL	3	51
B AM METEOROL SOC	2	47
INHAL TOXICOL	2	39
PURE APPL GEOPHYS	2	4
ENVIRON HEALTH PERSP	1	25
BIOSCIENCE	1	21
OECOLOGIA	1	16
ECOL APPL	1	13
BIOGEOCHEMISTRY	1	11
GLOBAL CHANGE BIOL	1	9
FUEL PROCESS TECHNOL	1	5
WATER RESOUR RES	1	5
FRONT ECOL ENVIRON	1	4
GEOPHYS RES LETT	1	4
J AEROSOL SCI	1	1
J ENVIRON QUAL	1	1
16TH CONFERENCE ON PROBABILITY AND STATISTICS IN THE ATMOSPHERIC SCIENCES	1	0
ENVIRON EXP BOT	1	0
ENVIRON FLUID MECH	1	0
ENVIRON MODELL SOFTW	1	0
FOURTH CONFERENCE ON ATMOSPHERIC CHEMISTRY: URBAN, REGIONAL AND GLOBAL SCALE IMPACTS OF AIR POLLUTANTS	1	0
J CHEM PHYS	1	0
J EXPO SCI ENV EPID	1	0
WETLANDS	1	0

Table 3. Countries Represented

Country	No. of Papers	No. of Citations
USA	98	655
Greece	2	46
Germany	4	24
England	1	23
Taiwan	1	11
Canada	2	5
South Korea	2	5
Japan	1	4
India	1	2
Switzerland	1	1
Finland	1	0
Norway	1	0
Yugoslavia	2	0

The papers were also assessed to determine the degree of impact measured as the expected number of citations divided by the actual number of citations. The expected number is the average number of citations for an article published in a particular journal. Across all articles, the ratio was 1.3 indicating that the papers were cited more than expected. Table 4 shows the papers with the highest impact ratios.

Table 4. Papers with the Highest Impact Ratio (Expected No. of Citations Versus Actual No. of Citations)

No. of Citations	Expected No. of Citations	Impact Ratio	Author	Journal	YR	Title
23	2.8	8.2	Canagaratna, MR	AEROSOL SCI TECH	2004	Chase studies of particulate emissions from in-use New York City vehicles
27	3.6	7.5	Daigle, CC	INHAL TOXICOL	2003	Ultrafine particle deposition in humans during rest and exercise
18	2.8	6.4	Drewnick, F	AEROSOL SCI TECH	2004	Measurement of ambient aerosol composition during the PMTACS-NY 2001 using an aerosol mass spectrometer. Part I: Mass concentrations
2	0.4	5.6	Chang, MCO	J AIR WASTE MANAGE	2004	Measurement of ultrafine particle size distributions from coal-, oil-, and gas-fired stationary combustion sources
5	1.0	4.8	Hogrefe, O	J AIR WASTE MANAGE	2004	Semicontinuous PM2.5 sulfate and nitrate measurements at an urban and a rural location in New York: PMTACS-NY summer 2001 and 2002 campaigns
13	2.8	4.6	Drewnick, F	AEROSOL SCI TECH	2004	Measurement of ambient aerosol composition during the PMTACS-NY 2001 using an aerosol mass spectrometer. Part II: Chemically speciated mass distributions
13	2.9	4.5	Bischoff, JM	WATER AIR SOIL POLL	2001	N storage and cycling in vegetation of a forested wetland: Implications for watershed N processing
10	2.8	3.6	Kim, E	J GEOPHYS RES-ATMOS	2004	Improving source identification of fine particles in a rural northeastern US area utilizing temperature-resolved carbon fractions
18	5.1	3.5	Ren, XR	ATMOS ENVIRON	2003	OH and HO2 chemistry in the urban atmosphere of New York City
12	3.6	3.4	Utell, MJ	INHAL TOXICOL	2002	Cardiovascular effects associated with air pollution: Potential mechanisms and methods of testing