

Workshop 10: Measurement of Particle Size (Ultrafine, Fine, and Coarse)

Chair: Richard Flagan, Caltech

Co-Chair: Fatima Andrade, U. Sao Paulo

Tuesday, April 1, 2003

3:00 PM - 4:30 PM

Oral Session

Location: LeBateau

OR10-01. RECENT ADVANCES IN OUR UNDERSTANDING OF PHYSICAL AND CHEMICAL PROPERTIES OF PARTICULATE MATTER.

Peter H. McMurry. *Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN.*

OR10-02. SPATIAL AND TEMPORAL VARIATIONS IN PM_{2.5} MORPHOLOGY.

Rafael N McDonald, Pratim Biswas. *Environmental Engineering Science, Washington University in St. Louis, St. Louis, MO.*

OR10-03. PARTICLE FORMATION AND GROWTH IN SO₂- AND VOC-RICH PLUMES NEAR HOUSTON, TEXAS.

Charles A Brock, Michael Trainer. *Aeronomy Laboratory, NOAA, Boulder, CO; CIRES, University of Colorado, Boulder, CO.*

OR10-04. CHEMICAL CHARACTERIZATION OF FINE AND ULTRAFINE AEROSOLS DURING THE ROCHESTER, NY SUMMER INTENSIVE, 2002.

Ann M Dillner, Xia Su, James J Schauer, Mei Zheng, Glen R Cass. *Chemical and Materials Engineering, Arizona State University, Tempe, AZ; Environmental Chemistry and Technology Program, University of Wisconsin, Madison, WI; Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA.*

OR10-05. USING MASS SPECTROMETRY TO MEASURE PARTICLE COMPOSITION AS A FUNCTION OF SIZE.

Ann M. Middlebrook. *NOAA, Boulder, CO.*

Poster Session

Location: Grand Ballroom 2-4

P10-01. INTENSIVE ANALYSIS OF AMBIENT AEROSOLS IN THE GREATER CINCINNATI AIRSHED.

Rafael N McDonald, Pratim Biswas, Shaohua Hu, Dainius Martuzevicius, Sergey A Grinshpun, Tiina Reponen, Grace LeMasters. *Environmental Engineering Science, Washington University in St. Louis, St. Louis, MO; Department of Environmental Health, University of Cincinnati, Cincinnati, OH.*

P10-02. REGIONAL ULTRAFINE PARTICLE NUCLEATION OBSERVED IN ST. LOUIS, MO.

Qian Shi, Hiromu Sakurai, Peter H McMurry. *Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN; Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN; Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN.*

P10-03. INTERCOMPARISON OF APS, ELPI AND LPI FOR COARSE, FINE AND BIMODAL PARTICLE MASS SIZE-DISTRIBUTIONS.

Joakim H Pagels, Anders Gudmundsson, Eva Gustavsson, Lars Asking, Mats Bohgard. *Division of Aerosol Technology (EAT), Lund University, Lund, Sweden; Pharmaceutical & Analytical R&D, Astra Zeneca R&D, Lund, Sweden.*

P10-04. REAL-TIME PM MEASUREMENTS WITH OUTDOOR AIR ELPI.

Henna Tuomenoja, Timo Mäkelä, Risto Hillamo, Marko Palonen. *Product Management, Dekati Ltd., Tampere, Finland; Aerosol Research, Finnish Meteorological Institute, Helsinki, Finland.*

P10-05. MEASUREMENTS OF AEROSOL MASS AND SIZE DISTRIBUTION IN A RESIDENTIAL AREA IMPACTED BY WOOD SMOKE.

Lars Gidhagen, Christer Johansson, Erik Swietlicki, Hans-Christen Hansson. *Research Division, Swedish Meteorological and Hydrological Institute, Norrköping, Sweden; Air Pollution Laboratory, Institute of Applied Environmental Research, Stockholm, Sweden; Division of Nuclear Physics, Lund University, Lund, Sweden.*

P10-06. EFFECTS OF GASEOUS POLLUTANTS AND METEOROLOGICAL PARAMETERS ON NUCLEATION AND GROWTH OF ULTRAFINE PARTICLES IN URBAN AMBIENT AIR.

Cheol-Heon Jeong, Philip K. Hopke, David Chalupa, Henry D. Felton. *Civil and Environmental Engineering, Clarkson University, Potsdam, NY; Chemical Engineering, Clarkson University, Potsdam, NY; Environmental Medicine, University of Rochester Medical Center, Rochester, NY; Division of Air Resources, New York State Department of Environmental Conservation, Albany, NY.*

P10-07. NUMBER CONCENTRATION AND SIZE DISTRIBUTION OF URBAN AEROSOLS NEAR DOWNTOWN DETROIT.

Li-Hao Young, Gerald J Keeler. *Department of Environmental Health Sciences, University of Michigan, Ann Arbor, MI; Department of Atmospheric, Oceanic, and Space Sciences, University of Michigan, Ann Arbor, MI.*

P10-08. DIURNAL AND SEASONAL TRENDS IN OUTDOOR PARTICLE SIZE DISTRIBUTIONS MEASURED AT URBAN AND RURAL LOCATIONS DURING THE PITTSBURGH AIR QUALITY STUDY.

Charles Stanier, Andrey Khlystov, Spyros N Pandis. *Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA.*

P10-09. AEROSOL SIZE DISTRIBUTIONS: A COMPARISON OF MEASUREMENTS FROM URBAN AND RURAL SITES.

G. Garland Lala, Olga Hogrefe, Kenneth L. Demerjian. *Atmospheric Sciences Research Center, The University at Albany, State University of New York, Albany, NY.*

P10-10. CONTINUOUS MEASUREMENT OF THE ATMOSPHERIC AEROSOL PARTICLE SIZE DISTRIBUTION AT THE ST. LOUIS-MIDWEST SUPERSITE.

Hiromu Sakurai, Qian Shi, Xiaoliang Wang, Keung S. Woo, Peter H. McMurry. *Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN.*

P10-11. AEROSOL NUMBER-SIZE DISTRIBUTIONS AT AN URBAN LOCATION: LONG TERM DATA FROM SEATTLE, WA. PARTICULATE MATERIAL CENTER, CENTRAL MONITORING SITE.

David Covert, Robert Elleman, Astrid Schreuder, Thomas Lumley, Timothy Larson, Eugene Kim. *Atmospheric Science, University of Washington, Seattle, WA; Environmental Health, University of Washington, Seattle, WA; Biostatistics, University of Washington, Seattle, WA; Civil Engineering, University of Washington, Seattle, WA; Chemical Engineering, Clarkson University, Potsdam, NY.*

P10-12. STATISTICAL SUMMARY AND OBSERVATIONS OF SEMICONTINUOUS PARTICLE SIZE DISTRIBUTIONS MEASURED AT THE BALTIMORE SUPERSITE.

Narayanan PV Nair, John M. Ondov, Seung S. Park. *Department of Chemistry and BioChemistry, University of Maryland, College Park, MD; Department of Chemistry and BioChemistry, University of Maryland, College Park, MD.*

P10-13. SIZE RESOLVED MASS BALANCE OF AEROSOL PARTICLES OVER THE METROPOLITAN REGION OF SAO PAULO, BRAZIL.

Rita Y Ynoue, Maria de Fatima Andrade. *Department of Atmospheric Sciences, Institute of Astronomy, Geophysics and Atmospheric Sciences - University of Sao Paulo, Sao Paulo, SP, Brazil.*

P10-14. PARTICLE FORMATION AND GROWTH IN SO₂- AND VOC-RICH PLUMES NEAR HOUSTON, TEXAS.

Charles A Brock, Michael Trainer. *Aeronomy Laboratory, NOAA, Boulder, CO; CIRES, University of Colorado, Boulder, CO.*

P10-15. SIZE-RESOLVED AEROSOL CHEMICAL COMPOSITION MEASUREMENTS DURING THE NEW ENGLAND AIR QUALITY STUDY WITH AN AEROSOL MASS SPECTROMETER ABOARD THE *RONALD H. BROWN*.

Ann M Middlebrook, Manjula R Canagaratna, Douglas R Worsnop. *Aeronomy Laboratory, NOAA, Boulder, CO; Aerodyne Research Inc., Billerica, MA.*

P10-16. CHEMICAL CHARACTERIZATION OF FINE AND ULTRAFINE AEROSOLS DURING THE ROCHESTER, NY SUMMER INTENSIVE, 2002.

Ann M Dillner, Xia Su, James J Schauer, Mei Zheng, Glen R Cass. *Chemical and Materials Engineering, Arizona State University, Tempe, AZ; Environmental Chemistry and Technology Program, University of Wisconsin, Madison, WI; Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA.*

P10-17. CHARACTERIZATION OF CONCENTRATED ULTRAFINE AEROSOLS.

Ann M Dillner, Xia Su, James J Schauer, Robert Gelein, Mei Zheng, Glen R Cass. *Chemical and Materials Engineering, Arizona State University, Tempe, AZ; Environmental Chemistry and Technology Program, University of Wisconsin, Madison, WI; Department of Environmental Medicine, Univeristy of Rochester Medical Center, Rochester, NY; Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, GA.*

P10-18. SEASONAL EFFECTS ON THE SIZE DISTRIBUTION OF PAH, EC AND OC IN CLAREMONT, LOCATED DOWNWIND OF CENTRAL LOS ANGELES.

Antonio H. Miguel, Arantzazu Eiguren-Fernandez, Peter A. Jaques, Bill Grant, Paul Mayo, Constantinos Sioutas. *Southern CA Particle Center and Supersite, UCLA, Los Angeles, CA; SCPCS, USC, Los Angeles, CA.*

P10-19. SIZE AND CHEMICAL CHARACTERIZATION OF URBAN ULTRAFINE AND FINE PARTICULATE MATTER IN THE EASTERN UNITED STATES.

Michele F. Sipin, Yongxuan Su, Kimberly A. Prather, Robert Gelein, Gunter Oberdorster, Mark J. Utell. *Department of Chemistry and Biochemistry, University of California, San Diego, La Jolla, CA; Department of Environmental Medicine, University of Rochester, Rochester, NY.*

P10-20. MASS AND CHEMICALLY RESOLVED SIZE COMPOSITIONS OF FINE PARTICULATE MATTER AT THE PITTSBURGH SUPERSITE.

Juan C Cabada, Spyros N Pandis, Sarah Rees, Satoshi Takahama, Andrey Khlystov, Allen L Robinson, Cliff I Davidson. *Chemical Engineering, Carnegie Mellon University, Pittsburgh, PA.*

P10-21. ASPIRATION AND TRANSFER EFFICIENCIES OF THE TSP AND DICHOTOMOUS PM SAMPLING INLETS.

Lee C. Kenny, David Mark, G. Beaumont, A. Gudmundsson, W. Koch. *Health and Safety Laboratory, Sheffield; Institute of Occupational Medicine, UK; Lund University of Technology, Sweden; Fraunhofer Institute for Aerosol Research, Germany.*

P10-22. THE DEVELOPMENT AND DESIGNATION TESTING OF A NEW EPA APPROVED FINE PARTICLE INLET A STUDY OF THE U.S. EPA DESIGNATION PROCESS.

L. C Kenny, T. Merrifield, D. Mark, R. Gussman, A. Thorpe. *H.S.E. Laboratory, Sheffield; BGI Inc., Waltham, MA.*

P10-23. CORRECTION OF DROPLET DISTORTION EFFECTS IN AERODYNAMIC PARTICLE SIZING INSTRUMENTS.

Paul A. Baron, Anthony B. Martinez, Erica N. Jones. *National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Cincinnati, OH.*

P10-24. SPATIAL AND TEMPORAL VARIATIONS IN PM_{2.5} MORPHOLOGY.

Rafael N McDonald, Pratim Biswas. *Environmental Engineering Science, Washington University in St. Louis, St. Louis, MO.*

P10-25. THE NATURE OF SIZE-RESOLVED INDIVIDUAL ASIAN DUST STORM PARTICLES COLLECTED AT GROUND-BASED SITE ON WEST COAST OF JAPAN.

Mikio Kasahara, Chang-Jin Ma, Susumu Tohno, Shinjiro Hayakawa. *Graduate School of Energy Science, Kyoto University, Uji, Kyoto, Japan; Graduate School of Engineering, Hiroshima University, Higashi-Hiroshima, Hiroshima, Japan.*

P10-26. CALIBRATION OF THE NANO-MOUDI II CASCADE IMPACTOR.

Virgil A. Marple, Bernard A. Olson. *Mechanical Engineering, University of Minnesota, Minneapolis, MN; Mechanical Engineering, University of Minnesota, Minneapolis, MN.*