

# Spatial Data Analysis Technical Exchange Workshop

Sheraton Imperial Hotel and Convention Center, RTP, NC 27703

December 3-5, 2001

**Monday December 3, 2001**

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**8:30 Registration**

**Morning General Session: Description of Regulatory Needs and Overview of Techniques**

**9:00 Welcome and Success for the Workshop** *John Bachmann, EPA Office of Air Quality Planning and Standards*

**9:15 Regulatory Needs for Spatial Analysis** *Joe Paisie, EPA Office of Air Quality Planning and Standards*

**10:15 Break**

**10:30 Network Design - Puget Sound Application** *Steve Bortnick, Battelle Memorial Institute*

**10:50 Network Design - S-PLUS Data Interface** *Doug Nychka, National Center for Atmospheric Research*

**11:10 Network Design - Spatial Interpolation Approaches** *Montserrat Fuentes, North Carolina State University & Maria de Iorio, Oxford University, U.K.*

**11:30 Network Optimization** *Paul Sampson, University of Washington*

**11:50 Concentration Fields - Positive Matrix Factorization** *Pentti Paatero, University of Helsinki & Phil Hopke, Clarkson University*

**12:10 Concentration Fields - Hierarchical Approach** *Mark Berliner, Ohio State University & Steve Bortnick, Battelle Memorial Institute*

**12:30 Lunch**

**Afternoon Technical Session: Statistical Modeling of Concentration Fields**

**1:30 Hierarchical Techniques** *Mark Berliner, Ohio State University & Steve Bortnick, Battelle Memorial Institute*

**2:30 Principle Component Analysis** *Brian Eder, EPA Office of Research and Development*

**3:15 Break**

**3:30 Positive Matrix Factorization - Interpretation of Fields** *Pentti Paatero, University of Helsinki & Phil Hopke, Clarkson University*

**4:30 Inter-annual Comparison of Positive Matrix Factorization Results** *Kurt Paterson, Michigan Technological University*

**5:30 Adjourn**

Tuesday December 4, 2001

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**Morning Technical Session: Spatial Prediction and Network Optimization**

**8:30 Overview of National Network Assessment** *Mark Schmidt & Rich Scheffe, EPA Office of Air Quality Planning and Standards & Rudy Husar, Washington University*

**9:00 Regional Network Assessment** *Mike Rizzo, EPA Region VI*

**9:30 Uses for Spatial Fields** *Al Cimorelli, EPA Region III*

**10:00 Break**

**10:15 Network Selection Using Entropy** *Montserrat Fuentes, North Carolina State University*

**11:15 Optimal Network Design by Inhomogeneous MCMC Simulation** *Maria de Iorio, Oxford University, U.K.*

**12:15 Lunch**

**Afternoon Technical Session: Spatial Prediction and Network Optimization (Continued)**

**1:30 Dynamic Assessment - adding/removing sites** *Doug Nychka, National Center for Atmospheric Research*

**2:30 Network Design using Pareto Optimality Methods** *Paul Sampson, University of Washington*

**3:30 Break**

**4:00 Mixing Continuous and FRM Sites** *Steve Bortnick, Battelle Memorial Institute*

**5:00 Adjourn**

Wednesday December 5, 2001

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**Morning Session: Review of Techniques and Potential Applications**

**8:30 Moderated Open Discussion on Integration of Techniques, Applications of Techniques (especially in regulatory setting), and Future Enhancements** *Moderators: Shelly Eberly, EPA Office of Air Quality Planning and Standards & Dave Holland, EPA Office of Research and Development*

**10:00 Break**

**10:30 Possible Improvements to Techniques and How to Make Them Available to Others** *Panel: All Presenters*

**11:45 Closing Remarks** *Ellen Baldrige & Shelly Eberly, EPA Office of Air Quality Planning and Standards*

**12:00 Adjourn**