

13. REFERENCES

- Air Resource Specialists (1995). Nephelometer Data Reduction and Validation (IMPROVE Protocol). Technical Instruction 4400-5010. Air Resource Specialists Inc., Ft. Collins, CO. March 1995.
- Anfossi, D.; Sacchetti, D.; and Trini-Castelli, S. (1995). Development and sensitivity analysis of a Lagrangian particle model for long range dispersion. *Environmental Software*, **10**:263-287.
- Arnott, W.P.; Moosmüller, H.; Rogers, C.F.; Jin, T.; and Bruch, R. (1999). Photoacoustic spectrometer for measuring light absorption by aerosol: Instrument description. *Atmos. Environ.*, **33**(17):2845-2852.
- Ashbaugh, L.L.; Eldred, R.A.; and Green, M.C. (2001). Temporal and spatial characteristics of atmospheric aerosols in Texas during the Big Bend Regional Aerosol and Visibility study (BRAVO). In: Proceedings of the “Regional Haze and Global Radiation Balance – Aerosol Measurements and Models” conference, Bend, OR. Air & Waste Management Assoc., Pittsburgh, PA.
- Baylor University (2000). 1999 Executive Summary: Airborne Pollution Monitoring Services. Baylor University, Waco, TX.
- Beck, R.W. (1986). Pacific Northwest Regional Aerosol Mass Apportionment Study (PANORAMAS), Final report. Prepared for PANORAMAS Steering Committee, States of Washington, Oregon, and Idaho, by Washington (State) Department of Ecology, Rowesix, Olympia, WA.
- Bench, G.; Grant, P.G.; Ueda, D.; Cliff, S.S.; Perry, K.D.; and Cahill, T.A. (2002). The use of STIM and PESA to respectively measure profiles of aerosol mass and hydrogen content across Mylar rotating drum impactor samples. *Aerosol Sci. Technol.*, **36**:642-651.
- Big Bend Natural History Assoc. (1990). Big Bend Biosphere Reserve Brochure. Big Bend Natural History Assoc., P.O. Box 196, Big Bend National Park, TX 79834.
- Black, T. (1994). The new NMC mesoscale Eta model: Description and forecast examples. *Weather and Forecasting*, **9**:265-278.
- Bodhaine, B.A. (1995). Aerosol absorption measurements at Barrow, Mauna Loa and the South Pole. *J. Geophys. Res.*, **100**(D5):8967-8975.
- Brown, S.G.; Herckes, P.; Ashbaugh, L.; Hannigan, M.P.; Kreidenweis, S.M.; and Collett, J.L., Jr. (2002). Characterization of organic aerosol in Big Bend National Park, Texas during the Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study. *Atmos. Environ.*, **36**(38):5807-5818.

- Byun, D.W.; and Ching, J.K.S. (1999). Science algorithms of the EPA MODELS-3 community multiscale air quality (CMAQ) modeling system. Report No. EPA/600/R-99/030. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC.
- Cahill, T.A.; and Wakabayashi, P. (1993). Chapter 7: Compositional analysis of size-segregated aerosol samples. In: *Measurement Challenges in Atmospheric Chemistry*, Newman, L., Ed. American Chemical Society, Washington, DC, pp. 211-228.
- Cahill, T.A.; Cliff, S.S.; Jimenez-Cruz, M.; Perry, K.D.; and McHugo, S. (2003). Final report to BRAVO on the project – Very fine ($0.26 > D_p > 0.09 \mu\text{m}$) Silicon plus Sulfur as a Tracer of Coal Fired Power Plants during BRAVO. University of California, DELTA Group, Davis, CA.
- Chin, M.; Rood, R.B.; Lin, S.-J.; Muller, J.-F.; and Thompson, A.M. (2000). Atmospheric sulfur cycle simulated in the global model GOCART: Model description and global properties. *J. Geophys. Res.*, **105**:25671-24687.
- Chow, J.C.; Watson, J.G.; Kuhns, H.D.; Etyemezian, V.; Lowenthal, D.H.; Crow, D.J.; Kohl, S.D.; Engelbrecht, J.P.; and Green, M.C. (2004). Source profiles for industrial, mobile, and area sources in the Big Bend Regional Aerosol Visibility and Observational (BRAVO) Study. *Chemosphere*, **54**(2):185-208.
- Day, D.E.; Malm, W.C.; and Kreidenweis, S.M. (1997). Seasonal variations in aerosol composition acidity at Shenandoah and Great Smoky Mountains National Parks. *J. Air & Waste Manage. Assoc.*, **47**(3), 411-418.
- Derber, J.C.; Parrish, D.F.; and Lord, S.J. (1991). The new global operational analysis system at the National Meteorological Center. *Weather and Forecasting*, **6**:538–547.
- Dietrich, D.L.; Molenaar, J.D.; and Faust, J.F. (1989). Transmissometer extinction measurements in an urban environment. In: *Visibility and Fine Particles*, Mathai, C.V., Ed. Air & Waste Management Assoc., Pittsburgh, PA, pp. 374-383.
- Dietz, R.N. (1996). Regional and long-range transport of air pollution – Lectures of a course held at the Joint Research Institute. Elsevier, Amsterdam, pp. 215-247.
- Draxler, R.R. (1998). Hysplit_4 User's Guide. National Oceanic and Atmospheric Administration, Air Resources Laboratory, Silver Springs, MD.
<http://www.arl.noaa.gov/hysplit.html>.
- Draxler, R.R.; and Hess, G.D. (1998). Description of the HYSPLIT_4 modeling system (revised 1998). NOAA Technical Memorandum ERL ARL-22. National Oceanic and Atmospheric Administration, Air Resources Laboratory, Silver Springs, MD.
- Emery, C.; Tai, E.; and Yarwood, G. (2001). Enhanced Meteorological Modeling and Performance Evaluation for Two Texas Ozone Episodes (final report). Prepared for Texas Natural Resource Conservation Commission, Austin, TX, by Environ International Corp., Novato, CA.

- Enting, I. G. (2002). *Inverse Problems in Atmospheric Constituent Transport*. Cambridge University Press, Cambridge, England.
- Fine, S.S.; Howard, S.C.; Eyth, A.M.; Herington, D.A.; and Castleton, K.J. (2002). The EPA Multimedia Integrated Modeling System software suite. Presentation at the Second Federal Interagency Hydrologic Modeling Conference, July 28-August 1, Las Vegas, NV.
- Galindo, I.; Ivlev, L.; Gonzalez, A.; and Ayala, R. (1998). Airborne measurements of particle and gas emissions from the December 1994-January 1995 eruption of Popocatepetl volcano (Mexico). *J. of Volcanology and Geothermal Research*, **83**:197-217.
- Gebhart K.; and Malm, W.C. (1991). Examination of source regions and transport pathways of organic and light absorbing carbon into remote areas of the United States. In: Proceedings of the A&WMA Annual Meeting, Vancouver, BC, Canada. Air & Waste Management Assoc., Pittsburgh, PA. Paper #91-82.4.
- Gebhart K.; and Malm, W.C. (1994). Estimation of emission rates in Mexico by receptor modeling, In: Proceedings of the Aerosols and Atmospheric Optics. Radiation Balance and Visual Air Quality conference. Air & Waste Management Assoc., Pittsburgh, PA, pp. 1125-1142.
- Gebhart, K.A.; and Malm, W.C. (1997). Spatial and temporal patterns in particulate data measured during the MOHAVE study. *J. Air & Waste Manage. Assoc.*, **47**:119-135.
- Gebhart, K.A.; Malm, W.C.; and Flores, M. (2000). A preliminary look at source-receptor relationships in the Texas-Mexico border area. *J. Air & Waste Manage. Assoc.*, **50**(5):858-868.
- Gebhart, K.A.; Kreidenweis, S.M.; and Malm, W.C. (2001). Back-trajectory analyses of fine particulate matter measured at Big Bend National Park in the historical database and the 1996 scoping study. *Sci. Total Environ.*, **276**(1-3):185-204.
- Georgoulas, B. (2003). Was BRAVO Meteorology “Typical”? Texas Commission on Environmental Quality, Austin, TX.
- Georgoulas, B.; Dattner, S.; and Mercado, F. (2003). Evaluation of the Reconstruction Equation at Big Bend during BRAVO & Using Factor Analysis to Relate Aerosol Concentrations to Light Extinction. Texas Commission on Environmental Quality, Austin, TX.
- Green, M.C.; Kuhns, H.D.; Etyemezian, V.; and Pitchford, M.L. (2000). Final Program Plan for the Big Bend Regional Aerosol and Visibility Observational Study (BRAVO). Desert Research Institute, Las Vegas, NV.
http://www2.nature.nps.gov/air/studies/bravo/BRAVO_plan.pdf.

- Green, M.C.; Kuhns, H.D.; Pitchford, M.; Dietz, R.; Ashbaugh, L.; and Watson, T. (2003). Application of the tracer-aerosol gradient interpretive technique to sulfur attribution for the Big Bend Regional Aerosol and Visibility Observational Study. *J. Air & Waste Manage. Assoc.*, **53**(5):586-595.
- Grell, G.A.; Dudhia, J.; and Stauffer, D.R. (1994). A Description of the Fifth-Generation Penn State/NCAR Mesoscale Model (MM5). NCAR/TN-389+STR. National Center for Atmospheric Research, Boulder, CO.
- Hand, J. L.; and Kreidenweis, S. M. (2002). A new method for retrieving particle refractive index and effective density from aerosol size distribution data. *Aerosol Sci. Technol.*, **36**:1012-1026.
- Hand, J.L.; Kreidenweis, S.M.; Sherman, D.E.; and Collett, J.L., Jr. (2002). Aerosol size distributions and visibility estimates during the Big Bend Regional Aerosol Visibility and Observational Study (BRAVO). *Atmos. Environ.*, **36**:5043–5055.
- Hatcher, L. (1994). A step-by-step approach to using the SAS system for factor analysis and structural equation modeling. SAS Institute Inc., Cary, NC.
- Heffter, J.L. (1980). Air Resources Laboratories Atmospheric Transport and Dispersion Model (ARL-ATAD). Technical Memorandum ERL ARL-81. National Oceanic and Atmospheric Administration, Rockville, MD.
- Hering, S.V.; Stolzenburg, M.R.; Hand, J.L.; Kreidenweis, S.M.; Lee, T.; Collett, J.L. Jr.; Dietrich, D.; and Tigges, M. (2003). Hourly concentrations and light scattering cross sections for fine particle sulfate at Big Bend National Park. *Atmos. Environ.*, **37**:1175-1183.
- Herman, J.; Bhartis, P.; Torres, O.; Hsu, C.; Seftor, C.; and Celarier, E. (1997). Global distribution of UV-absorbing aerosol from Nimbus-7_TOMS data. *J. Geophys. Res.*, **102**:16911-16922.
- IMPROVE (2004). Interagency Monitoring of Protected Visual Environments (IMPROVE) website: <http://vista.cira.colostate.edu/improve/>. Colorado State University, Ft. Collins, CO.
- Kahl, J.D.; and Samson, P.J. (1986). Uncertainty in trajectory calculations due to low resolution meteorological data. *J. Climate Appl. Meteor.*, **25**:1816-1831.
- Kanamitsu, M. (1989). Description of the NMC global data assimilation and forecast system. *Weather and Forecasting*, **4**:335-342.
- Kuhns, H.D.; Green, M.C.; Pitchford, M.L.; Vasconcelos, L.; White, W.H.; and Mirabella, V. (1999). Attribution of particulate sulfur in the Grand Canyon to specific point sources using Tracer-Aerosol Gradient Interpretive Technique (TAGIT). *J. Air & Waste Manage. Assoc.*, **49**(8):906-915.

- Kuhns, H.D.; Green, M.C.; and Etyemezian, V. (2003). Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study Emissions Inventory. Desert Research Institute, Las Vegas, NV.
- Lee, T.; Kreidenweis, S.M.; and Collett, J.L., Jr. (2004). Aerosol ion characteristics during the Big Bend Regional Aerosol and Visibility Observational Study. *J. Air & Waste Manage. Assoc.*, in press.
- Malm, W.C.; Gebhart, K.A.; Cahill, T.A.; Eldred, R.A.; Pielke, R.A.; Stocker, R.A.; Watson, J.G.; and Latimer, D.A. (1989). The Winter Haze Intensive Tracer Experiment. National Park Service, Ft. Collins, CO.
- Malm, W.C. (1992). Characteristics and origins of haze in the continental United States. *Earth-Sci. Rev.*, **33**:1-36.
- Malm, W.C.; Sisler, J.F.; Huffman, D.; Eldred, R.A.; and Cahill, T.A. (1994). Spatial and seasonal trends in particle concentration and optical extinction in the United States. *J. Geophys. Res.*, **99**(D1):1347-1370.
- Malm, W.C.; Molenaar, J.V.; Eldred, R.A.; and Sisler, J.F. (1996). Examining the relationship among atmospheric aerosols and light scattering and extinction in the Grand Canyon Area. *J. Geophys. Res.*, **101**(D14):19251-19265.
- Malm, W.C.; and Day, D.E. (2000). Optical properties of aerosols at Grand Canyon National Park. *Atmos. Environ.*, **34**(20):3373-3391.
- Malm, W.C.; Day, D.E.; and Kreidenweis, S.M. (2000). Light scattering characteristics of aerosols as a function of relative humidity – Part I: A comparison of measured scattering and aerosol concentrations using theoretical models. *J. Air & Waste Manage. Assoc.*, **50**(5):686-700.
- MCNC (2002). Sparse Matrix Operator Kernel Emissions modeling system. University of North Carolina, MCNC Environmental Modeling Center, Chapel Hill, NC. <http://www.emc.mcnc.org/products/smoke/>.
- Mercado, F.; Dattner, S.; and Georgoulas, B. (2004). Application of Factor Analysis to the BRAVO Dataset. Texas Commission on Environmental Quality, Austin, TX.
- Molenaar, J.F.; Dietrich, D.L.; and Tree, R.M. (1989). Application of a Long Range Transmissometer to Measure the Ambient Atmospheric Extinction Coefficient in Remote Pristine Environments. In: *Visibility and Fine Particles*, Mathai, C.V., Ed. Air & Waste Management Assoc., Pittsburgh, PA, pp. 374-383.
- Molenaar, J.V. (1997). Analysis of the real world performance of the Optec NGN-2 ambient nephelometer. In *Proceedings, Visual Air Quality: Aerosols and Global Radiation Balance*, I.H. Tombach, L.W. Richards, P.B. Russell, and P. Saxena, Eds. Air & Waste Management Assoc., Pittsburgh, PA, pp. 243-265.

- Molenar, John (2002). Warnings on the Use of Transmissometer Data to Analyze Long-Term Visibility Trends.
<http://vista.cira.colostate.edu/IMPROVE/Publications/GrayLit/TransDataUseWarning/TransDataUseWarning.htm>. December 12.
- Moosmüller, H.; Arnott, W.P.; Rogers, C.F.; Chow, J.C.; Frazier, C.A.; Sherman, L.E.; and Dietrich, D.L. (1998). Photoacoustic and filter measurements related to aerosol light absorption during the Northern Front Range Air Quality Study (Colorado 1996/1997). *J. Geophys. Res.*, **103**(D21):28149-28157.
- Nenes, A; Pandis, S. N.; and Pilinis, C. (1998). ISORROPIA: A new thermodynamic equilibrium model for multiphase component inorganic aerosols. *Aquatic Chemistry*, **4**(1):123-152.
- Parrish, D.F.; and Derber, J.C. (1992). The National Meteorological Center's Spectral Statistical interpolation analysis system. *Mon. Wea. Rev.*, **120**:1747-1763.
- Parrish, D.; Purser, J.; Rogers, E.; and Lin, Y. (1996). The regional 3D variational analysis for the Eta model. In: Preprints, 11th conference on Numerical Weather Prediction, 19-23 August 1996, Norfolk, VA. American Meteorological Society, Boston, MA.
- Patterson, D.E.; Husar, R.B.; Wilson, W.E.; and Smith, L.F. (1981). Monte Carlo simulation of daily regional sulfur distribution: Comparison with SURE sulfate data and visual range observations during August, 1977. *J. Appl. Meteorol.*, **20**:404-420.
- Perry, K.D.; Cahill, T.A.; Eldred, R.A.; and Dutcher, D.D. (1997). Long-range transport of North African dust to the eastern United States. *J. Geophys. Res.*, **102**(D10):11225-11238.
- Pierce, T.; Kinnee, E.; and Geron, C. (1998). Development of a 1-km resolved vegetation cover database for regional air quality modeling. In: Proceedings of the 23rd Conference on Agricultural and Forest Meteorology, November 1998, Albuquerque, NM. American Meteorological Society, Boston, MA.
- Pinnick, R.G.; Fernandez, G.; Martinez-Andazola, E.; Hinds, B.D.; Hansen, A.D.A.; and Fuller, K. (1993). Aerosol in the arid southwest United States: Measurements of mass loading, volatility, size distribution, absorption characteristics, black carbon content, and vertical structure to 7km above sea level. *J. Geophys. Res.*, **98**(D2):2651-2666.
- Pitchford, M.L.; Green, M.C.; Kuhns, H.D.; Tombach, I.H.; Malm, W.C.; Scruggs, M.; Farber, R.J.; Mirabella, V.A.; White, W.H.; McDade, C.; Watson, J.G.; Koracin, D.; Hoffer, T.E.; Lowenthal, D.H.; Vimont, J.C., et al. (1999). Project MOHAVE, Final Report. U.S. Environmental Protection Agency, Region IX, San Francisco, CA.
<http://www.epa.gov/region09/air/mohave/report.html>.
- Pitchford, M.L.; Green, M.C.; Kuhns, H.D.; and Farber, R.J. (2000). Characterization of regional transport and dispersion using Project MOHAVE tracer data. *J. Air & Waste Manage. Assoc.*, **50**(5):733-745.

- Prospero, J. (1995). Saharan dust transport over the north Atlantic Ocean and Mediterranean. In: *The Impact of Desert Dust from Northern Africa Across the Mediterranean*; Guerzoni, S., and Chester, R., Eds. Kluwer Academic Publishers.
- Pun, B.K.; Seigneur, C.; Wu, S.Y.; and Kumar, N. (2003). Simulating inert tracers in the BRAVO project using CMAQ. Paper number 69802, Proceedings (CD-ROM) of the 96th Annual Conference and Exhibition, June 22-26, San Diego, CA. Air & Waste Management Assoc., Pittsburgh, PA.
- Pun, B.; Seigneur, C.; Wu, S.-Y.; Knipping, E.M.; and Kumar, N. (2004). Modeling Analysis of the Big Bend Regional Aerosol Visibility Observational (BRAVO) Study. EPRI Report 1009283. EPRI, Palo Alto, CA.
- Raabe, O.G.; Braaten, D.A.; Axelbaum, R.L.; Teague, S.V.; and Cahill, T.A. (1988). Calibration studies of the DRUM impactor. *J. Aerosol Sci.*, **19**(2):183-195.
- READY (2003). Realtime Environmental Applications and Display System website. National Oceanic and Atmospheric Administration, Air Resources Laboratory, Silver Spring, MD. <http://www.arl.noaa.gov/ready.html>.
- Richards, L.W.; Blanchard, C.L.; and Blumenthal, D.L. (1991). Navajo Generating Station Visibility Study. Report No. STI-90200-1124-FR. Prepared for Salt River Project, Phoenix, AZ, by Sonoma Technology, Inc., Santa Rosa, CA.
- Rolph, G.D.; and Draxler, R.R. (1990). Sensitivity of three-dimensional trajectories to the spatial and temporal densities of the wind field. *J. Appl. Meteor.*, **29**:1043-1054.
- SAI (2002). Regional Modeling System for Aerosols and Deposition (REMSAD). Systems Applications International, San Rafael, CA. http://www.remsad.com/documents/remсад_users_guide_final_03-29-02.doc.
- Saltbones, J.; Foss, A.; and Bartnicki, J. (1998). Norwegian Meteorological Institute's realtime dispersion model SNAP (Severe Nuclear Accident Program): Runs for ETEX and ATMES II experiments with different meteorological input. *Atmos. Environ.*, **32**:4277-4283.
- Saxena, P.; Hudischewskyj, A.B.; Seigneur, C.; and Seinfeld, J. (1986). A comparative study of equilibrium approaches to the chemical characterization of secondary aerosols. *Atmos. Environ.*, **20**(7):1471-1483.
- Schichtel, B.; and Husar, R. (1996). Source regions of influence for high and low ozone conditions in the Eastern U.S. Washington University, St. Louis, MO. http://capita.wustl.edu/otag/reports/sri/sri_hlo3.htm.
- Schichtel, B.A.; and Husar, R.B. (1997). Regional simulation of atmospheric pollutants with the CAPITA Monte Carlo Model. *J. Air & Waste Manage. Assoc.*, **47**(3):331-343.

- Schichtel, B.A.; Gebhart, K.A.; Barna, M.G.; Malm, W.C.; and Green, M.C. (2004). Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study Results: Air Quality Data and Source Attribution Analyses Results from the National Park Service / Cooperative Institute for Research in the Atmosphere. Colorado State University CIRA, Ft. Collins, CO.
- Seaman, N.L.; and Stauffer, D.R. (2003). Final Report to Electric Power Research Institute Contract EP-P3883/C1886 for MM5 Modeling in support of the Big Bend Regional Aerosol and Visibility Observation Study (BRAVO). Pennsylvania State University, University Park, PA.
- Seigneur, C.; Pai, P.; Hopke, P.K.; and Grosjean, D. (1999). Modeling atmospheric particulate matter. *Environ. Sci. Technol.*, **33**(3):80A-86A.
- Seinfeld, J.H.; and Pandis, S.N. (1998). *Atmospheric Chemistry and Physics: From Air Pollution to Climate Change*. John Wiley & Sons, New York, NY.
- Stohl, A. (1998). Computation, accuracy and applications of trajectories - A review and bibliography. *Atmos. Environ.*, **32**(6):947-966.
- Tang, I.N.; and Munkelwitz, H.R. (1994). Water activities, densities and refractive indices of aqueous sulfates and sodium nitrate droplets of atmospheric importance. *J. Geophys. Res.*, **99**:18801-18808.
- Trijonis, J.C.; Malm, W.C.; Pitchford, M.L.; White, W.H.; Charlson, R.J.; and Husar, R.B. (1990). Visibility: Existing and historical conditions – causes and effects. NAPAP Report 24. National Acid Precipitation Assessment Program (NAPAP), Washington, DC. http://vista.cira.colostate.edu/IMPROVE/Publications/Principle_pubs.htm.
- Turpin, B.J.; and Lim, H.J. (2001). Species contributions to PM_{2.5} mass concentrations: Revisiting common assumptions for estimating organic mass. *Aerosol Sci. Technol.*, **35**(1):602-610.
- Uliasz, M.; Stoker, R.A.; and Pielke, R.A. (1994). Numerical modeling of air pollution transport in the southwestern United States. In: Proceedings of the International Specialty Conference on Aerosol and Atmospheric Optics: Radiative Balance and Visual Air Quality. Air & Waste Management Assoc., Pittsburgh, PA, pp. 1229-1239.
- U.S. Dept. of the Interior (1983). *Big Bend*, Official National Park Handbook 119. National Park Service, Division of Publications, Washington, DC.
- USEPA (1992). Emissions Preprocessing System version 2 (EPS2) User's Guide. EPA-450/4-90-007DR. U.S. Environmental Protection Agency, Research Triangle Park, NC.
- USEPA (2000). Regional Acid Deposition Model version 2 (RADM2). <http://www.epa.gov/asmdnerl/radm.html>.

- USEPA (2001). Draft guidance for demonstrating attainment of air quality goals for PM_{2.5} and regional haze. U.S. Environmental Protection Agency, Research Triangle Park, NC. <http://vistas-sesarm.org/tech/draftpm.pdf>.
- USEPA (2002). MIMS Spatial Allocator. U.S. Environmental Protection Agency, Atmospheric Sciences Modeling Division, Research Triangle Park, NC. http://www.epa.gov/asmdnerl/mims/software/spatial_allocator.html.
- Vukovich, J. (2002). Technical Report: Emissions Processing for the Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study. MCNC Environmental Modeling Center, Research Triangle Park, NC.
- Watson, J.G.; Blumenthal, D.L.; Chow, J.C.; Cahill, C.F.; Richards, L.W.; Dietrich, D.; Morris, R.; Houck, J.E.; Dickson, R.J.; and Andersen, S.R. (1996). Mt. Zirkel Wilderness Area reasonable attribution study of visibility impairment, Vol. II: Results of data analysis and modeling. Prepared for Colorado Department of Public Health and Environment, Denver, CO, by Desert Research Institute, Reno, NV.
- Watson, T.B.; Johnson, R.; Pitchford, M.L.; Green, M.C.; Kuhns, H.D.; and Etyemezian, V. (2000). The Perfluorocarbon Tracer Releases during the Big Bend Regional Aerosol and Visibility Observational (BRAVO) Study. Technical Memorandum OAR Arl-237. National Oceanic and Atmospheric Administration, Air Resources Laboratory, Idaho Falls, ID. http://www2.nature.nps.gov/air/studies/bravo/tracer_release.html.
- White, W.; Macias, E.; Kahl, J.; Sampson, P.; Molenaar, J.; and Malm, W.C. (1994). On the potential of regional-scale emissions zoning as an air quality management tool for the Grand Canyon. *Atmos. Environ.*, **28**:1035-1045.
- Zhang, Y. (2001). Technical memorandum and sea-salt module software. Atmospheric and Environmental Research Inc., Lexington, MA.
- Zhang, Y.; Pun, B.; Vijayaraghavan, K.; Wu, S.-Y.; and Seigneur, C. (2002). CMAQ-MADRID: Technical documentation. EPRI, Palo Alto, CA.