



NOAA ARL Monthly Activity Report



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Highlights

1. First International NAERS Workshop. FRD staff are preparing to host the First International Workshop of the Network of Airborne Environmental Research Scientists (NAERS) on January 28 and 29, 2002. NAERS is an international network of scientists cooperating in the use of Small Environmental Research Aircraft (SERA), airborne instrumentation, and airborne data to investigate and solve environmental problems. The workshop goal is to enhance the effectiveness of airborne research efforts and the utility of the resulting science. The agenda for the workshop is at <http://www.noaa.inel.gov/docs/workshop.pdf> (tim.crawford@noaa.gov, Jerry Crescenti and Jeff French)

2. Forecasting for the 2002 Winter Olympics. The Intermountain Meteorological Workshop was held on the University of Utah campus on November 2. The focus of the workshop was on weather forecasting for the 2002 Winter Olympics. For the first time ever in this nation, weather forecasting for the Olympics will be a partnership shared by private firms, a university, and the federal government. The NWS will provide standard forecasts and model output. The University of Utah will provide ADAS surface analyses and detailed MM5 mesoscale model output based on NCEP model runs. Finally, a private consortium of meteorological companies will provide on-site weather forecasters at each one of the Olympic venues. All official Olympic forecasts will be issued by this latter group of meteorologists.

One item of interest is the competing desires of the various Olympic groups as far as desired weather is concerned. The various downhill, bobsled and luge runs want clear, sunny weather. They will make their own snow so that conditions will be consistent from the top of the run to the bottom. If it snows, both mechanical and manual effort must be invoked to remove the snow. However, with clear, sunny skies, atmospheric mixing conditions in the Salt Lake Valley becomes stagnant under strong temperature inversions. Air quality degrades significantly, thus degrading the air quality where the Olympic medal ceremonies will be held. Thus, the people who run the ceremonies want it to snow every night to keep the temperature inversion from forming and to provide a festive backdrop for the celebration. It will be interesting to see what really happens! (kirk.clawson@noaa.gov)

Silver Spring

3. Vortex and Temperature Update Through Summer of 2001. The size and displacement of the 300 mb north circumpolar vortex, as well as the global temperatures for troposphere and low stratosphere, have been updated through JJA of 2001. During this summer season, the vortex was centered almost exactly on the North Pole, the culmination of the tendency, since 1963, for a decrease with time in the eccentricity of the summer vortex (in contrast to winter and spring when there has been a tendency for an increase in vortex eccentricity with time). The very small vortex eccentricity during the past summer is in agreement with statistics for the 38-year period, which show that the vortex is less displaced into the Eastern Hemisphere near QBO east-wind maximum (which is now approaching), and less displaced into the Dateline Hemisphere when there is no El Nino (we are now in transition from La Nina to El Nino). As would be expected with a vortex centered on the Pole, tropospheric and low-stratospheric temperatures during the past summer were not anomalous, global surface and 850-300 mb temperatures remaining, respectively, about 0.5 and 0.2K above the 1961-1990 average, and global 300-100 mb and 100-50 mb temperatures remaining, respectively, about 0.6 and 1.4K below this average. (Jim Angell, 301 713 0295, x127)

4. WMO/UNEP Ozone Assessment. Work is well underway for the 2002 WMO/UNEP Ozone Assessment. A review meeting was held November 28-30, 2001 in Fairfax, VA, to provide overall review and coordination of first drafts of the five chapters. Dian Seidel is serving as one of several overall reviewers. Next steps include

preparation of second drafts, mail reviews, preparation of third drafts, and final review, to take place in June 2002. Major new developments for this assessment will be inclusion of information on very short lived substances that could deplete stratospheric ozone and the potential interaction if climate changes with ozone changes. (dian.seidel@noaa.gov)

5. HYSPLIT Modifications. The recent round of revisions intended to make HYSPLIT routinely available to NWS forecast offices is nearing its end. Four major enhancements were added. First, GRIB decoding software for AVN and ETA files was integrated into the menu system so that it is only necessary to select the model's initialization file and the scripts automatically decode the remaining GRIB files for input to Hysplit. Second, the program that converts multiple Hysplit runs (ensemble version) to probability formats was enhanced with customized map labeling features. Third, the source-receptor matrix extraction program was redesigned to work with the graphical interface menu, permitting an easier setup of the model in "source" mode, rather than the usual "receptor" applications. Fourth, the User's Guide was modified to reflect the recent code changes and divided into context specific files. These files can now be accessed easily. (roland.draxler@noaa.gov)

6. Ammonia Study. NOAA scientists are participating in an experimental comparison of chemical methods to measure ammonia in the atmosphere. Ammonia is the most abundant basic gas in the troposphere, and is responsible for new particle formation (in reaction with sulfur oxidation products) and ecosystem eutrophication. Despite its importance to tropospheric and ecosystem chemistry, few adequate methods exist to quantify its concentration in the atmosphere. ARL scientists are collaborating with researchers from USDA Agricultural Research Service, Howard University, the University of Maryland Chesapeake Biological Laboratory, and the University of Delaware to intercompare results from a variety of batch (integrated) and real-time techniques. The experimental site is located within 500m of dairy barns on the USDA campus; depending upon wind direction, ammonia concentrations are expected to range from less than 1 to over 50 micrograms per cubic meter. Techniques being compared include annular and honeycomb denuders, bulk filter packs, acid impingers, passive samplers, a liquid fluorescence technique, and a conversion-difference/ozone chemiluminescence method. The experiment is scheduled to run through December 10. (winston.luke@noaa.gov)

Boulder

7. SURFRAD. Progress is being made in the installation of a SURFRAD site at the Canaan Valley Institute site near Davis, WV. Further information is given below, among the Oak Ridge items. An early Fall 2002 installation is most likely.

The standard pyrgeometers used for calibrating SURFRAD instruments were sent to the World Radiation Center in Davos, Switzerland for their annual calibration. The standard Quantum sensors, as well as those returned from the field this summer, were calibrated by their manufacturer. (John Augustine, 303 497 6415)

8. Symposium on Future Climate Services. On the 26th of October, the State Climate Office of North Carolina held a 25th anniversary Symposium on Future Climate Services in North Carolina. The conference was arranged by North Carolina State University. A list of recommendations was developed from this gathering. This list included Emergency Response, Air Quality and Natural Resource Management, Short- and Long-range Climate outlooks, Agriculture, Climatological Data Base, Agriculture and Education. Collaboration with the SURFRAD program was a central issue. The scientific research, educational benefits, and opportunity for student training of having the Department of Marine, Environmental and Atmospheric Sciences collaborate with SRRB in establishing and operating such a station were emphasized in the presentation. SURFRAD observations would add significantly to the state's meteorological data base for improving understanding of weather and climate, as well as provide data for university student research projects. (John DeLuisi, 303 497 6824)

9. OAR Web Team. Chris Cornwall is now representing ARL at meetings of the OAR Web Team. He is also representing ARL at meetings of the Technical Committee on Computing Resources (TCCR), and will be ARL's point of contact for IT security documentation requests from OAR, NOAA & DOC. Chris will, no doubt, be pestering each ARL division for more paperwork to prove to NOAA that we actually know what we're doing on computer and IT security. So please be nice to him ! (Chris Cornwall, 303 497 7316)

10. Central UV Calibration Facility (CUCF). The Central UV Calibration Facility (CUCF) acquired a reference high-performance UV spectroradiometer in November, 1998 from the USDA-National Resource Ecology Laboratory (NREL) built by SUNY-Atmospheric Science Research Center. The instrument was installed at the Table Mountain Test Facility (TMTF). The instrument has an approximate bandwidth of 0.1 nm, a stray light rejection of 10^{-10} , and a wavelength accuracy of 0.005 nm. This instrument is used by the USDA/NREL and NOAA/SRRB for UV research and by the CUCF for calibrations and comparisons with other UV instruments collocated at TMTF. To assess the temporal stability of the instrument, external calibrations are performed by the CUCF using horizontal 1000W lamps. These horizontal lamps are calibrated by the CUCF in the horizontal position and are traceable to NIST.

The instrument was initially scheduled for calibration by the CUCF with external lamps once per year. Initial results showed a larger than expected drop in the responsivity, which led the CUCF to perform more frequent calibrations. The instrument has been calibrated 13 times since November 1998. During each calibration 2 to 3 lamps are used for comparison and checks. From October 2000 to August 2001 there have been approximately monthly calibrations. During this 10 month period the instrument degraded by 27-23% over the 280 to 400 nm range. The degradation per month has been gradual and decreasing in percent per month. Recent calibrations before and after AMORE (Jun- Jul, 2001)- Atmospheric Measurements of Radiation Experiment showed a 1.8% to 1.5% change over the entire wavelength range. Using the external lamp calibrations and the internal daily lamp calibrations, the data are easily correctable for the years 2000 and 2001 and will provide a quality UV dataset for Table Mountain calibrations. (Kathy Lantz, 303 497 7280, Patrick Disterhoft, 303 497 6355)

Oak Ridge

11. Terrestrial Carbon Program. Repairs are nearing completion to the Walker Branch research tower, recently damaged by winds. Replacement of the electrical power to the tower will occur in December. (wilson@atdd.noaa.gov, White, Bellis, Brewer, Randolph)

12. Canaan Valley. In conjunction with the U. S. Fish and Wildlife Service (FWS), possible sites for a NOAA SURFRAD station were assessed. Pending approval from FWS management, the station is planned to be located on the Canaan Valley National Wildlife Refuge, collocated with the existing AIRMoN station. Monitoring of wet and dry deposition of pollutants to the region is continuing, as is a modeling effort to identify source regions. Installation of a flux system is planned for the spring. (vogel@atdd.noaa.gov, Meyers, Augustine-SRRB)

13. CASES-99. Representative temperature and wind speed profiles were used in a linear wave theory model to calculate the characteristics of ducted gravity waves observed on 14 October 1999 during the CASES-99 field campaign. This calculation gave a wave with a phase speed of 18.9 ms^{-1} , a period of 4 min, and a wavelength of 4500 m. The average characteristics calculated from field data are phase speed = 14.4 ms^{-1} , period = 4.5 min, and wavelength = 3900 m. These results compare favorably with estimates made from lidar and instrumented aircraft. The agreement between the model and observations indicates that the event was indeed a ducted gravity wave. (nappo@atdd.noaa.gov)

14. Climate Reference Network. A large DFIR (Double Fence Inter-comparison Reference) rain gauge fence was assembled and installed at the Climate Reference Network (CRN) site on the North Carolina Horticulture Center, near Asheville. In order to meet installation deadlines for the first five suites of CRN sites, site

preparation trips were planned and arrangements made for four of the first five sites. Towers were shipped to Rhode Island, New Hampshire, Nebraska, and Montana.

Ten Geonor rain gauges arrived in November. Heaters were installed on four gauges intended for the sites in MT and NE. Tests at the ATDD site compared a pair of thermistors in one aspirated shield to a single thermistor. Thermistors were also compared to several platinum resistance thermometers procured for this purpose. (hall@atdd.noaa.gov)

15. Dynamical/Photochemical Modeling. Trace gas results from two midday coupled LESchem simulations with different photolysis rate update intervals (900 and 60 s) were statistically analyzed. Recall that the photolysis (J) rates currently used by the LESchem model are generated by NCAR's TUV model. Horizontally averaged trace gas mixing ratio profiles from the end of the simulation showed only small differences between the two simulations. However, when these profiles were compared against horizontally averaged profiles from a simulation that used only an initial photolysis rate, surface mixing ratios for several species, such as nitrogen dioxide (NO_2) and acetaldehyde (CH_3CHO), differed by 10-20%. The differences were a result of TUV's more comprehensive method of calculating J rates as a function of changes in the actinic flux. In contrast, when photolysis rate updates are not provided, the SMVGEAR chemistry solver in LESchem simply scales the initial J values by the ratio of the current zenith angle versus the initial zenith angle. Therefore, in future coupled LESchem simulations, time-dependent TUV-generated photolysis rates will be utilized. (Decker, herwehe@atdd.noaa.gov)

Development work in introducing noncyclic lateral boundary conditions (BCs) into the large-eddy simulation (LES) modeling began. Getting away from periodic lateral boundary conditions will enable the coupled LESchem model to better simulate "real world" scenarios, especially when distinct and multiple pollutant plumes are included. Engineering literature that discusses advective boundary conditions was briefly reviewed. Many LES test runs with a passive tracer and noncyclic lateral BCs were conducted using the typical LESchem working grid spacing (200 m horizontal, 100 m vertical) and domain size (10 km \times 10 km \times 4 km). Simulations with an increased grid resolution of 50 m (both horizontal and vertical) followed, with the intention that by resolving the turbulent eddies down into the inertial subrange, resultant near-boundary gradients would be less severe. Results from these "higher resolution" simulations require more analysis. (herwehe@atdd.noaa.gov, Decker)

The double precision version of RAMS 3b was extracted from the LESchem model to become a stand-alone LES dynamics tool, which will allow the fitting of larger high resolution simulations on our limited computing hardware by not carrying along the extra memory requirements of the photochemistry modules. LES tests with this model were begun at the end of November. Future PBL dynamics modeling will examine the effect of double versus single precision floating point computations on the LES statistics. (herwehe@atdd.noaa.gov)

16. GEWEX/GCIP. Development of Linux-based software for sonic-anemometer data acquisition continues. Stable and reliable real-time data acquisition software has been developed and tested that will currently accommodate 4 different sonic anemometer models (Gill R2, Gill R3, RM Young, and Metek). The ability to acquire data from up to eight sonics simultaneously with one computer running Linux will be tested at Walker Branch next month. (dumas@atdd.noaa.gov, Meyers)

17. Mercury in the Arctic. The Relaxed Eddy Accumulation (REA) system from NOAA/ATDD was compared with a similar system from the Danish National Environmental Research Institute. Both systems, using denuder tubes coated with desorbed potassium chloride, were mounted side-by-side on 3-m towers at a rural (agricultural) field station near Copenhagen. Concentration of reactive gaseous mercury (RGM) at that site had previously been found correlated with temperature, nearing zero at 0°C. These results agreed: with air temperatures uniformly near 0° C, ambient concentrations of RGM hovered near the detection limit of the REA systems' denuders, hampering intercomparison. An artificial source was therefore created using 250 mg of mercury-chloride crystals in each of six open jars 100 m, 120 m, and 140 m upwind of the REA systems. The fluxes

reported by the two REA systems matched within 5%, also agreeing well with a non-REA continuous denuder tube. (brooks@atdd.noaa.gov, Meyers, Auble, Dumas)

Two sections: “Linkages: The Arctic Mercury Story” and “Mercury/Cadmium Pathways,” were written and submitted to the review team of the Arctic Monitoring and Assessment Program (AMAP) for inclusion in the *Arctic Air Pollution Assessment Report*, to appear in August 2002. (brooks@atdd.noaa.gov and Lindberg; ORNL)

18. *Extreme Turbulence Probe.* A road test of the ability of the ET probe developed for the Office of Naval Research to measure winds from varying direction had some highly encouraging preliminary results. The spherical sensor package responds to winds from any horizontal direction through sensors distributed over its entire circumference. At any instant (*i.e.* any 20 ms) only a small subset, surrounding the stagnation point of the incident wind, actually reports. If the wind direction changes, the stagnation point may drift sufficiently far from that pattern’s nominal origin to cross a threshold. Then new independent sensors suddenly replace others in the pattern, risking a jump in the reported wind. The road trip tested this situation by rotating the sphere while traveling down the highway. The light-blue line in the figure identifies the origin of the sensor pattern. Note periods of rapid oscillation when the incident wind is near a threshold. The dark blue is the reported wind direction, showing no evidence of influence from the sudden changes in the suite of sensors used to determine it. Thus, the differential pressure sensors are functioning well. The absolute pressure sensors are currently posing some puzzles which are being pursued. (dobosy@atdd.noaa.gov, Auble, Ludwig)

19. *U.S. Weather Research Program.* ATDD participated in the U.S. Weather Research Program Prospectus Development Team 11, on meteorological research needs for air quality forecasting. The PDT addressed research needs for improving urban and rural, local and regional air quality forecasts. A wide range of experts took part. After a series of presentations covering a broad spectrum of atmospheric interests, the PDT broke into three working groups to generate written recommendations. The PDT 11 leaders, Walt Dabberdt and Mary Anne Carroll, are presently combining these recommendations into a (hopefully) coherent report to the U.S. Weather Research Program. (hosker@atdd.noaa.gov)

20. *USDA Forest Service National Fire Plan.* Two ATDD scientists participated in a workshop and planning meeting for the new Forest Fire Smoke Prediction Program held in Silver Spring on November 29-30. Funded by the Joint Fire Science Program, the new smoke prediction program is principally a collaboration of researchers at ARL/HQ and the USDA Forest Service Rocky Mountain Research Station Fire Sciences Laboratory in Missoula, Montana, with Dr. Wei Min Hao (USDA/FS/RMRS/FSL) as the principal investigator. Dr. Warren Heilman, of the Forest Service’s North Central Research Station(NCRS), also attended the meeting to assure a smooth merging of current collaborative research between NCRS and ATDD with the proposed products from the ARL/HQ - RMRS/FSL collaboration. ATDD’s Will Pendergrass gave a talk on near-field applications of mesoscale and smoke trajectory modeling. Some of ATDD’s coupled LES-photochemical modeling research was also informally shown and discussed with interested meeting participants. (herwehe@atdd.noaa.gov, Pendergrass)

Idaho Falls

21. *CBLAST-Low.* Tami Grimmett, the NRC Postdoctoral Fellow who joined FRD last month, has started on developing an algorithm that will merge GPS altitude data and altitudes provided by three Riegl lasers to determine a more accurate altitude estimate. After installing and becoming familiar with several specialized software packages, she is also doing background preparation for a project to determine a low-wind speed cutoff for accurately determining SAR-derived fluxes. (tami.grimmett@noaa.gov)

22. *Urban Dispersion.* A data report is being prepared entitled *Meteorological measurements during the VTMX/URBAN 2000 field study* by Kirk Clawson and Jerry Crescenti. This report will summarize the

meteorological measurements acquired during the VTMX/URBAN 2000 field study which include two sonic anemometers deployed in downtown Salt Lake City, and a 10-m tower, Doppler sodar and radar wind profiler deployed at the Raging Waters entertainment theme park about 5 km southwest of the city center. (jerry.crescenti@noaa.gov, Kirk Clawson).

23. Tracer Technology. Software for the upgraded Automated Tracer Gas Analysis System (ATGAS) has been completed and tested. The prototype system was used in a production mode for several days this month and performed very well. Construction of three more systems to replace the aging systems currently in use is under way. (roger.carter@noaa.gov, Debbie Lacroix, Shane Beard)

24. INEEL Support. Meetings were held in November with several users of FRD's MDIFF dispersion products. These users include INEEL DOE and contractor staff together with the State of Idaho's Department of Environmental Quality. The meetings focused on what kinds of future upgrades would be desirable for either the MDIFF model or its graphical interface INEELVis. The most desirable upgrade, requested particularly by the State of Idaho, is a capability to estimate the deposition of radioactive material. MDIFF currently has no deposition algorithms. Another possible upgrade is an ability to break down the total radiation dose into specific exposure pathways. FRD is looking into the options for upgrading the dispersion modeling. One option is to add the required algorithms to MDIFF. Another possibility is to replace MDIFF with an alternative model that already has the desired algorithms. The attraction of the latter option is that it may save a lot of time. A couple of potential alternatives have already been identified, namely the CALPUFF model and the APGEMS model from Pacific Northwest National Laboratory. (richard.eckman@noaa.gov)

INEEL has requested that FRD run a series of puff-model simulations using several years of data from the FRD Mesonet. The idea is to build up an ensemble of concentration estimates at each point in the model domain. From these ensembles, it will be possible to pull out the 95th percentile concentration. These 95th percentiles are used by INEEL in their environmental planning. (richard.eckman@noaa.gov)

The EMWIN system at the INEEL Emergency Operations Center was repaired and secured for winter. The antenna cable had been disconnected, presumably by wind action. The cable was reconnected and secured, and the sand bags holding the dish antenna in place were replaced. The EMWIN system collects National Weather Service information via a GOES satellite link. It is in place in the EOC as a back up to our regular Internet based data service. (roger.carter@noaa.gov, Shane Beard)

25. INEEL Mesoscale Modeling. The MM5 modeling at FRD proceeded fairly smoothly during November. A minor problem erupted towards the end of the month when the NWS moved all their model forecast products to a new ftp server. MM5 uses these products for initial and boundary conditions. The transition from the old to the new server occurred fairly abruptly, which caused some disruption in the model runs at FRD. Graphical output from the MM5 simulations are now being posted on the FRD web page under the Weather menu. Work is also under way to post text output for specific locations at INEEL. (richard.eckman@noaa.gov)

The cloud microphysics scheme currently being used in the FRD MM5 runs came under some scrutiny in November. A simple ice scheme was being used, which assumes all hydrometeors are frozen below 0°C and liquid otherwise. This scheme cannot therefore account for supercooled water, which is common in clouds down to -20°C. There was some concern that this scheme may be creating too much ice-cloud cover, which could in turn lead to a negative temperature bias at the surface. The simple-ice scheme has been replaced by the so-called Schultz scheme in the latest simulations. This scheme keeps track of five hydrometeors: cloud water, cloud ice, rain, snow, and graupel. Interactions among the hydrometeors are kept simple enough in this scheme to prevent the execution time from increasing enormously. Still, the scheme does have a noticeable impact on execution time, although it is currently not enough to cause problems. (richard.eckman@noaa.gov)

26. DOE-ID Statement of Work. The annual Statement of Work was prepared and submitted to DOE-ID. It included a commitment to revise the *Climatology of the INEEL*. We have also been working with DOE-ID to write a new Interagency Agreement. Our current Interagency Agreement is now 13 years old. DOE-ID wants to include wording that makes us subject to oversight by their local maintenance and operations contractor, who is currently Bechtel, Babcock and Wilcox, Inc. We question the legality of requiring the work done by a federal agency to be managed by a contractor of another federal agency. We are working with NOAA legal counsel to eliminate this problem. (kirk.clawson@noaa.gov)

27. NOAA Light Aircraft Workshop. On November 14-16, 2001, FRD staff participated in the NOAA Light Aircraft Workshop hosted by the Office of Marine and Aviation Operations in Silver Spring, MD. FRD's presentation was titled "Small Environmental Research Aircraft (SERA) - ARL's Light Aircraft Need". The presentation explained the need for a SERA to support ARL's air-surface exchange, air quality and air chemistry research. The proposed SERA would allow a balance to be developed between cost, availability and capability. The proposed shift to lower-cost small aircraft is made possible by the decreasing size and increasing power of scientific instrumentation. (tim.crawford@noaa.gov and Tom Watson)

28. Plan for ARL Operation of a Small Environmental Research Aircraft (SERA). A document outlining justification for the acquisition of a specialized, small aircraft by the NOAA Air Resources Laboratory for use in environmental research and documenting the operating procedures for the aircraft was prepared and submitted to ARL headquarters. This document describes the types of research that will be performed with the aircraft, the specialized characteristics of the aircraft necessary to accomplish ARL research goals, and outlines the SOPs for maintenance, operation, and modification of the aircraft. It also describes the training and experience requirements for SERA pilots. (tom.watson@noaa.gov)

Las Vegas

29. Local Climatic Change. The ongoing project to help in predicting maximum temperatures for selected long-term MEDA stations continued in November with predictions made for most days utilizing the new overlapping method. The results were encouraging with the average absolute error for all stations at 3.3 degrees F with a bias of -.4 degrees F. The slightly negative bias seems to be related to the anonymously warm days for the first 3 weeks of November. Even with a cooler than normal last week in November, the average temperatures were about 3 degrees above normal. The project will be continued through the winter. (douglas.soule@noaa.gov)

30. Hazardous Materials (HAZMAT) Spills Center (HSC). An assessment was completed for the HSC in support of a future customer's experiment involving phosgene. Several scenarios involving different amounts of chemical released were generated. Results were given as concentrations versus distances from the source point for five levels of concern. While conducting the HSC phosgene assessment, it was found that the versions of ALOHA running in ARL/SORD did not have phosgene in its chemical database. The new versions of CAMEO and ALOHA were downloaded from the CAMEO website and installed on the ARL/SORD computers. Other organizations that use this software were contacted to check their software and upgrade if necessary. (walter.w.schalk@noaa.gov)

31. Particulate Matter (PM) Supersites Technical Meeting. SORD staff participated in the PM Supersites Technical Meeting in Research Triangle Park, NC, on November 13-14. The principal investigators for the seven Supersites made coordinated presentations to address a number of technical topics concerning the PM measurements. The topics included performance of new measurement technologies, comparisons of continuous PM mass and component species measurements with filter based sampling/analysis, short-term variations in PM mass and composition, and high size resolution PM monitoring methods comparisons. Also discussed were plans for a coordinated winter intensive for eastern Supersites in early 2002, data analysis for the July 2001 summer intensive, and the development of a relational database for all Supersites and related data that will be available for use by data analysts working across multiple Supersites. (marc.pitchford@noaa.gov)

32. Regional Planning Organizations (RPOs) Technical Coordination Meeting. SORD staff participated as co-leader of the Data Analysis and Monitoring work group at the technical coordination meeting of the five RPOs in St. Louis, MO, on November 27-28. States are organized by EPA into RPOs to promote regional assessments and planning for Regional Haze Rule implementation. The overall goal of the Regional Haze Rule is to reduce regional haze in 156 national parks and wilderness areas to natural levels over a period of the next 60 years. The regulation calls for state pollution emission planning every 10 years with midterm corrections if needed. This results in a need for national-scale assessments of measured haze and model forecasting of future haze trends every five years for decades to come. W. Neff, NOAA-ETL, was invited to make a presentation on NOAA plans for implementing a national radar wind profiler network that would be of significant value for improving the accuracy of meteorological modeling as needed by the RPOs. A group of RPO representatives will work with NOAA to ensure that the proposed network will meet their needs. A web-based regional haze national database and analysis system currently being used by the Western RPO will be expanded to cover the haze-related data needs for the entire country. (marc.pitchford@noaa.gov)