AOML Keynotes
Miami, Florida

September 1999 | Atlantic Oceanographic and Meteorological Laboratory | Volume 3, Number 9

ENVIDS Provides Web Access to AOML Data Sets

AOML's new Environmental Intranet Data Server, ENVIDS, became operational in August 1999. ENVIDS is the product of a two-year effort to provide interactive, on-demand World-Wide Web access to a variety of environmental data sets compiled at AOML. Access to and retrieval of data is facilitated by viewing and/or retrieving selected data sets using a Web browser. Current ENVIDS data sets include:

- Oceanographic sounding data (CTDs [conductivity-temperature-depth] from the tropical Pacific and XBTs [expendable bathythermographs] from the Atlantic)
- Flight-level data from hurricane reconnaissance missions
- Biology and ocean chemistry data (provides a hyperlink to the Ocean Chemistry Division data server)
- 1998 World Ocean Atlas (WOA98)

Global Lagragian drifter data and data about the history of hurricanes in the Atlantic basin will be added to ENVIDS in the future. The URLs for the ENVIDS Intranet web site are:

http://db/dbweb

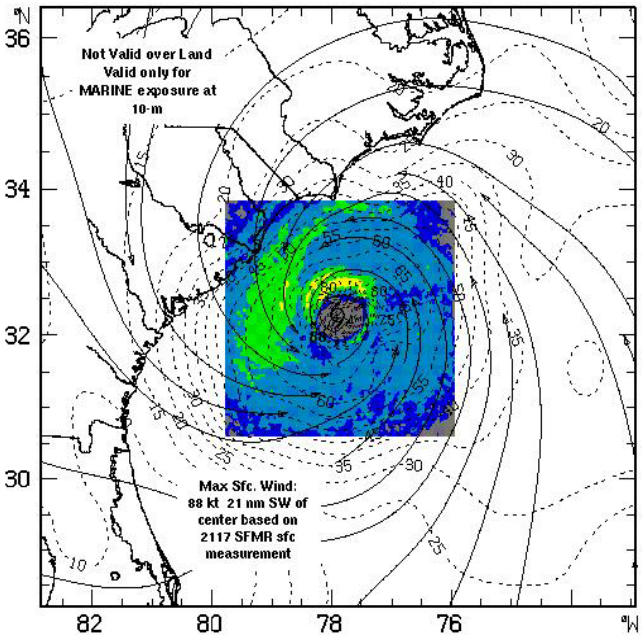
http://db.aoml.noaa.gov/dbweb

Comments, ideas, and/or suggestions for improving ENVIDS are welcome.

Here Comes Y2K:
The Federal government's fiscal year 2000 (FY-2000) begins October 1, 1999

NOAA Hurricane Scientists Achieve Long-Time Goal of Incorporating Real-Time Data

Hurricane forecasters used a new measurement technology to accomplish their long-term goal of improved observations and forecasts of sea-level winds in hurricanes. On August 29, 1999, scientists from the National Oceanic and Atmospheric Administration's Aircraft Operations Center and Hurricane Research Division (HRD) of AOML successfully transmitted sea-level wind measurements from Hurricane Dennis using an experimental instrument aboard one of the NOAA "hurricane hunter" research reconnaissance aircraft.



Wind field map of Hurricane Dennis that incorporates real-time measurements from an experimental stepped frequency microwave radiometer sensor.

The new measurements were incorporated into HRD's real-time hurricane wind analysis system and combined with conventional wind data from buoys, ships, Global Positioning System (GPS) dropwindsondes, and satellite cloud tracking to determine Dennis' wind field. Forecasters at the National Hurricane Center used the enhanced wind field as guidance to distribute warnings of gale force winds (40 mph or higher) over coastal North and South Carolina.

"What this new set of data provides is continuous measurement of wind speed over a large area," says NOAA/AOML hurricane wind field expert Mark Powell. "Based on successful comparison to observations such as buoys and coastal weather stations, the data from the new instrument was accepted by the HRD analysis system in real-time and used by the National Hurricane Center."

The technology in this experiment featured a stepped frequency microwave radiometer (SFMR) built by the University of Massachusetts and Quadrant Engineering in Amherst, Massachusetts. The SFMR measured the signal returned by the surface beneath the aircraft as it was churned up by hurricane winds. This technology *(continued on page 2)*

(continued from page 1)

has been in use for research purposes for a number of years, but has never been available in real-time for forecasting.

The measurements from the SFMR sensor provided a critical addition to existing tools for wind speed measurements, said Powell. Dropwindsondes deployed from aircraft flying through and around a hurricane have been instrumental in providing point observations within a storm, sending information every half second. Winds measured at approximately 10,000 ft by the U.S. Air Force and NOAA hurricane reconnaissance aircraft are used in atmospheric models to estimate surface winds, resulting in as much as 20% uncertainty. By incorporating the SFMR wind speed data, scientists hope to reduce this uncertainty to provide more accurate forecasts for coastal communities.

"The SFMR gives us much more complete storm coverage at the surface than the sondes, and at a fraction of the cost" said Peter Black, the HRD scientist who helped develop the SFMR. "Eventually we hope to see this instrument on all hurricane hunter aircraft."

Official NOAA press release of September 2, 1999. Contact: Erica Van Coverden (coverden@aoml.noaa.gov or 305-361-4541).

New, government picture identification cards are being processed and distributed throughout AOML. If you haven't had your picture taken for a new ID card, please contact Sharon Kenefick, AOML receptionist, to schedule an appointment (305-361-4420 or receptionist@aoml.noaa.gov). AOML staff members are encouraged to wear their new ID cards to distinguish them from the many guests that daily visit the AOML facility. The ID cards can also be used as proof of employment on Virginia Key/Key Biscayne when purchasing Rickenbacker Causeway annual passes.

Former Director Returns Safely from Vacation in Turkey

Hugo Bezdek, AOML Director from 1979-1997, traveled to Turkey this past August for a vacation. During his visit, Turkey experienced a massive 7.4 earthquake.

Hugo began his vacation in Turkey with a visit to the city of Istanbul on August 7th. He traveled with friends to Amasaya a few days later to view the last total solar eclipse of the 20th century on August 11th. Atmospheric conditions for viewing the eclipse were so ideal at Amasaya that television pictures and footage of the event, which lasted approximately 2 minutes, 45 seconds, were broadcast locally and internationally.

After the eclipse, Hugo and friends traveled to the ancient city of Ankara. On August 16th, they left Ankara to visit the village of Urgup in Cappadocia, southeast of Ankara. The following morning at 3:00 a.m. local time the 45-second earthquake struck. Fortunately, Urgup was not affected. Ankara, located about 160 miles from the earthquake epicenter did, however, experience the quake, but not seriously enough to cause any deaths or structural damage. The northwestern industrial city of Izmit, closest to the earthquake's epicenter, suffered massive destruction and damage. While the official death toll is estimated at just over 15,000 people, the unoffical estimate is as high as 30,000. Istanbul also experienced damage from the earthquake in a few of its districts.

Closeup of northwest region of Turkey showing location of massive 7.4 earthquake.

Much of Turkey sits on an earthquake-prone belt known as the North Anatolian fault, a 900-mile crack in the earth. The North Anatolian fault is a "strike-skip fault," much like the San Andreas fault in California, characterized by the horizontal movement of rocks on one side of the fault sliding past rocks on the other side. Seven earthquakes have occurred along the North Analtolian fault since 1939, when a record 8.0 quake killed an estimated 40,000 people in the eastern province of Erzincan.

We are relieved that Hugo is back in Miami safe and sound. Welcome home, Hugo!

DAILY TROPICAL WEATHER DISCUSSION

12:30 P.M. (WEEKDAYS)
4TH FLOOR MAP ROOM
APPROX. 20 MINUTES

In support of the Hurricane Research Division's annual Hurricane Field Program, join us for daily map discussions about tropical cyclones around the world, with a focus on Atlantic hurricanes. Each week a new volunteer will lead the discussions. For more information, contact Chris Landsea (landsea@aoml.noaa.gov or 305-361-4357).

Farewell

LTJG Ginger Garte, NOAA Corp officer assigned to AOML's Ocean Chemistry Division, resigned from the NOAA Corps on September 3, 1999. Ginger joins Carnival Cruise Lines to become a supervisor in their newly developed Environmental Health and Safety Division. During Ginger's two year tour of duty at AOML, she assisted Ocean Chemistry Division scientists with several sediment program research projects. Ginger also served as AOML's 1999 Morale, Welfare, and Recreation Committee chairperson and voluntarily taught aerobics classes to the staff of AOML, Southeast Fisheries, and University of Miami's Rosenstiel School of Marine and Atmospheric Science. Best of luck to Ginger for her continued success.

Congratulations

Nirva Morisseau-Leroy, Oracle Database Administrator and Application Developer for AOML's Hurricane Research Division, has written a book about the SQLJ programming language. *Oracle 8i SQLJ Programming: Database Programming in Java for Enterprise Systems Development* "targets database application developers who wish to use cutting-edge technology to vend information over the Web. The SQLJ language specifies the integration of SQL statements in Java programs." Coauthors include Martin Solomon, Computer Science Professor at Florida Atlantic University, and Gerald Momplaisir, former director of AOML's Computer Networks and Services Division. The 608-page book has been published by Osborne/McGraw-Hill and will be available for purchase in November 1999.

Chunzai Wang, Oceanographer with the Physical Oceanography Division, has been selected to serve on the ERL Outstanding Scientific Paper Selection Panel. The panel will determine the winner(s) of the 1999 ERL Outstanding Scientific Paper Award.

Rickenbacker Causeway annual passes (C-Pass and C-Card) must be renewed by October 1, 1999. For information and questions, contact the Rickenbacker Causeway Toll Plaza at (305) 854-2468.

Project H.O.P.E. Dispels Myths About Epilepsy

Paul Dammann making his first Project H.O.P.E. presentation to AOML staff members.

Paul Dammann, oceanographer with AOML's Ocean Acoustics Division, has become a mentor for Project H.O.P.E. (Helping Other People with Epilepsy). The program is sponsored by the Epilepsy Foundation of America, a national volunteer health organization dedicated to the prevention and cure of seizure disorders, alleviation of their effects, and promotion of optimal quality of life for people affected by such disorders.

Project H.O.P.E. seeks to educate the public about epilepsy and to dispel myths and misconceptions concerning the condition. Paul is one of only six individuals in the United States to undergo and complete the training to become a Project H.O.P.E. mentor. He became involved with Project H.O.P.E. to encourage others with epilepsy to realize they can lead productive lives and to increase public awareness of the disorder. The Epilepsy Foundation of America would eventually like to have trained mentors in all 63 of their affiliate offices.

"Epilepsy and its Effects in the Research Environment," Paul's first presentation as a Project H.O.P.E. mentor, was made at AOML on Friday, September 10, 1999. He will be presenting additional seminars to various special interest groups and businesses in the local Miami area on behalf of Project H.O.P.E. in the near future. "There isn't any large group that doesn't have contact with epilepsy," states Paul.

Epilepsy is a neurological disorder characterized by recurring seizures, brief, temporary disturbances in the electrical activity of the brain. Approximately 2.3 million Americans have some form of epilepsy. It primarily affects children and young adults, with 70% of all cases developing before the age of 25. Paul was diagnosed with having epilepsy in 1969 when he was 16 years old. For more information about Project H.O.P.E., please contact Paul Dammann at (305) 361-4453 or dammann@aoml.noaa.gov.

September Guest Seminars*

September 2, 1999

Low-wavenumber structure and evolution of the hurricane inner core observed by airborne dual-Doppler radar

Paul Reasor
Department of Atmospheric Sciences
Colorado State University, Ft. Collins, Colorado

September 15, 1999

Diagnostics of the Surface Momentum Field in the Pacific

Donald B. Olson
University of Miami/Rosenstiel School of Marine and Atmospheric Science, Miami, Florida

September 17, 1999

Relationships between ENSO phase and Atlantic circulation response from an African perspective

Mark Jury
University of Zululand,
KwaDlangezwa, South Africa

***Seminars begin at 3:00 p.m. in the first floor conference room. Coffee and tea are served at 2:45 p.m.**

Travel

Thomas Carsey will travel to Honolulu, Hawaii to participate in an atmospheric chemistry research experiment entitled "Inorganic Halogens in the Marine Boundary Layer" from August 25-October 5, 1999.

Silvia Garzoli and Robert Molinari will attend an ARGO Planning Meeting in La Jolla, California on September 7-11, 1999.

David Palmer attended the Second International Shallow Water Fisheries Sonar Conference in Seattle, Washington on September 7-10, 1999.

Jessie Harris will attend the CLIMAR 99 WMO Workshop on Advances in Marine Climatology in Vancouver, Canada on September 7-17, 1999.

Shari Yvon-Lewis, Kelly Goodwin, Jason Masters, and Sara Cotton will travel to Kwajalein, Republic of the Marshall Islands to embark on a research cruise aboard the R/V *Ronald H. Brown* from September 9-October 23, 1999. The four Ocean Chemistry Division scientists will study the processes involved in biogeochemical cycling of selected halocarbons.

Sim Aberson will attend an Ensemble Forecasting Workshop at the National Center for Atmospheric Research in Boulder, Colorado on September 9-11, 1999. Sim will also attend a NOAA Diversity Council Meeting in Silver Spring, Maryland on September 23-24, 1999.

Michael Farmer will attend a NOAA Leadership Training Program in Silver Spring, Maryland on September 13-17, 1999.

Rik Wanninkhof, Kitack Lee, and Tsung-Hung Peng will attend the Progress in Carbon Cycling Model Meeting in Princeton, New Jersey on September 22-24, 1999.

Frank Marks will participate as a member of the review panel of the NASA/Goddard Space Flight Center Mesoscale Atmospheric Processes Branch in Greenbelt, Maryland on September 26-29, 1999.

Visitors

Hugh Willoughby, director of AOML's Hurricane Research Division, met with representatives from Koyo Musen, a Japanese software development company, on Friday, August 27, 1999. Through an interpreter, Willoughby described the societal impact and structure of hurricanes, data acquisition methods and techniques, and dissemination of collected data to forecasters at the National Hurricane Center. The group of visitors was comprised of Mr. Wakamatsu, President of Koyo Musen, his two top assistants and two computer programmers. Koyo Musen is ranked the 30th largest company in Japan.

Hugh Willoughby, center, with visitors from Koyo Musen, a Japanese software development company.

Representatives from WinStar Telecommunications, Inc., met with Office of the Director personnel on August 25-26, 1999 to discuss the installation of a highly-directional, 38-GHz radio system on AOML's roof. The system will be part of a network that will be used to study propagation characteristics during rainfall along paths between AOML, RSMAS, the Miami Museum of Science, and the WinStar building in downtown Miami.

The RSMAS shuttle began its service to and from Vizcaya Metrorail Station, RSMAS, and the University of Miami's main campus with the start of the RSMAS fall semester on Wednesday, August 25, 1999. AOML staffers are welcome to use the shuttle free of charge, Monday through Friday, until the semester ends on December 3, 1999.

Abbreviated RSMAS Shuttle Schedule
(August 25, 1999-December 3, 1999)
Shuttle Service: Monday-Friday

Depart Viscaya Metrorail Station for RSMAS:		Depart RSMAS for Viscaya Metrorail Station:
8:15 AM		8:30 AM
8:45 AM		3:30 PM
3:50 PM		5:30 PM

Keynotes is published monthly by the Atlantic Oceanographic and Meteorological Laboratory. Contributions are welcome and should be submitted prior to the last week of each month to ensure inclusion in the following month's edition. Please address all correspondence to: Office of the Director, 4301 Rickenbacker Causeway, Miami, FL 33149. Contributions may also be submitted by fax at (305) 361-4442 or by email (derr@aoml.noaa.gov).

Editor – Kristina Katsaros
Publishing Editor – Gail Derr

The deadline for submitting material for the October issue of *Keynotes* is Friday, September 24, 1999.

***Keynotes* can be viewed online in PDF format at the following Internet web site address:**
http://www.aoml.noaa.gov/keynotes