



NEWSLETTER

**National Weather
Association**

NO. 10 – 9 SEPTEMBER 2010

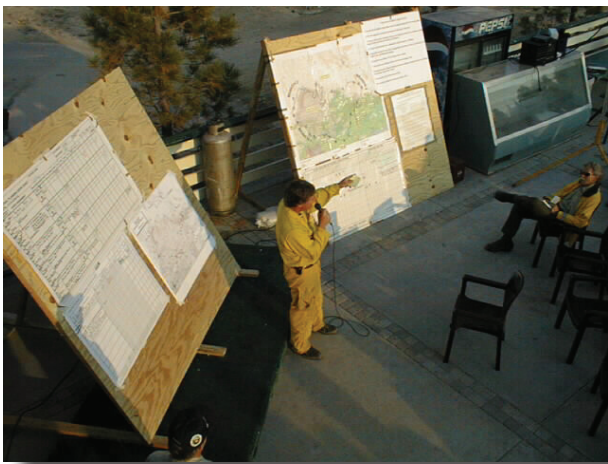
The Historic 2000 Wildfire Season – A Look Back 10 Years Later

Rich Okulski [Incident Meteorologist (IMET), Weather Forecast Office (WFO) Tucson] remembers receiving a phone call at home from Meteorologist In Charge Glen Sampson in May 2000. Glen's first question was "Did you sleep well?" Rich was getting ready for his fourth straight midnight shift; however, Glen's question told him he was about to be dispatched to another wildfire. He left at the crack of dawn the following

morning. The Scott Able Fire in the Sacramento Mountains of New Mexico had burned 17,000 acres in less than 24 hours. Another "Red Flag Warning" level wind event loomed in four days. The Incident Command Team received permission to use bulldozers near towns and in wilderness areas to create "fire breaks" to contain this wildfire.

This historic 2000 Wildfire Season cost the federal government \$1.6 billion to fight (2000 U.S. Dollars). The Cerro Grande Fire near the Los Alamos National Laboratory received international media attention. WFO Albuquerque sent daily fire weather forecasts to the White House during this event.

IMET Mike Chamberlain (WFO Grand Junction) was the first National Weather Service (NWS) employee dispatched to the Cerro Grande Fire on May 8, 2000. He remembers May 10 as the day of incredible fire weather and fire behavior.



IMET Bob Nester briefs Incident Command Team at Maudlow/Toston fire near Helena, Mont., August 2000

See FIRE, page 7

River Forecasting:

Part II—Estimating Local Flow and Routed Flow

Part I of this two-part series provided an overview of river level forecasting and estimation of how much precipitation has fallen in a river basin. Part II focuses on two of the more complicated aspects of river forecasting: determining how quickly rain and snowmelt will enter the river, and estimating how quickly water will arrive from upstream.

Precipitation runoff can enter a river in a matter of hours from impervious areas such as parking lots. Urbanized areas generate a lot of surface runoff because much of the land surface is impermeable

due to pavement and buildings. Rivers also respond quickly to rain that falls on already saturated soil: rain will run off the surface of saturated soil as if the area were paved. If the rain is sufficiently heavy, this can produce significant flash flooding in non-urbanized areas.

Water that soaks into the soil takes longer to reach the stream channel. Some of this water is stored in the soil and can only be released through evapotranspiration, while some water is free to move through the soil. Water

See RIVER, page 6

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October 25, 2010

On Oct. 25, the application period closes for the final two NWA scholarships in 2010: the Arthur Pike Scholarship in Meteorology and the Cassens/Phillips Family Undergraduate Scholarship in Meteorology.



HOPE TO SEE YOU IN TUCSON AT THE NWA ANNUAL MEETING!

NWA MEMBERS MAKING IT HAPPEN

MIKE GOLDBERG

Mike Goldberg is not only a talented meteorologist, but a very accomplished musician. He recently became a faculty member at Da Capo Virginia, a non-profit musical training organization.

Goldberg holds a Bachelor of music degree in Clarinet from the Eastman School of Music in Rochester, N.Y. He performed in the original production "In The Woods" on Broadway and routinely performs with the Richmond, Virginia Symphony and other prestigious symphonies and orchestras in Virginia. He also serves as an assistant conductor for the Richmond Philharmonic as well as a music director for several Virginia musical groups. He is the artistic director and founder of Crescendo, a professional chamber music ensemble.



He is a freelance meteorologist for WSET-TV in Lynchburg,

Virginia, provides daily Web forecasts for Richmond as well as forecasts for two local radio shows. He has also been a guest meteorologist on The Weather Channel. Mike serves on the NWA Broadcast Meteorology Committee after several years of chairing the committee, is the 2010 Annual Meeting Broadcaster Workshop Program Chair and holds the NWA Broadcaster's Seal of Approval.

Information for this article was obtained from the Da Capo Virginia website (www.dacapova.org/aboutus/faculty/NewFaculty/mikegoldberg.html).

BRYAN KARRICK

Bryan Karrick made a move back to his childhood stomping grounds, the Twin Cities. Karrick now works for WeatherNation in Excelsior, Minn. His previous position for nearly 12 years was as the morning weekday meteorologist on KCCI in Des Moines, Iowa.

Karrick was the NWA "Broadcaster of the Year" award winner in 2009, the chair of the Annual Meeting Broadcast Session for several years, has served on the Broadcast Committee and was a NWA Councilor from 2006-2007. He holds the NWA Broadcaster Seal of Approval and is an AMS Certified Broadcast Meteorologist.



PABLO SANTOS

Dr. Pablo Santos is the new Meteorologist in Charge at the NWS Miami-South Florida Forecast Office. Prior to this appointment, he was the Science and Operations Officer (SOO) at the Miami office.

Santos began his NWS career in the mid 90s at the Jacksonville, Fla., office and was promoted to the SOO position at the Miami office in 2000. He earned his doctorate in 2003 from Florida State University where he also earned his Master of Science degree.

Pablo is the editor of the NWA Electronic Journal of Meteorology and a member of the Remote Sensing Committee. He was the recipient of the NWA Individual Operational Achievement Award in 2005 and a member of a team that won the 2004 Group Operational Achievement Award.



NEZETTE RYDELL

Nezette Rydell recently moved from the Gulf Coast to Colorado where she is now the Meteorologist In Charge (MIC) of the NWS Denver/Boulder Forecast Office. She was previously the MIC at the NWS Office in Brownsville, Texas.

Rydell began her career in Texas as an intern and a forecaster in the San Antonio office. Later she became the Senior Service Hydrologist serving South Texas offices in Austin/San Antonio, Corpus Christi and Brownsville.

In 2003, she was promoted to the Warning Coordination Meteorologist position in Honolulu, Hawaii, supporting the forecast office, Central Pacific Hurricane Center, and national marine and aviation centers. She was a member of the World Meteorological Organization (WMO) Typhoon Committee Working Group on Hydrology and the Hawaii State Hazard Mitigation Forum. She is a member of the NWA Membership and Marketing Committee.



Eight Modules Join COMET Site

Since the last update from COMET, we have published eight English modules in a wide variety of topic areas, updated the ESRC to Version 2.0, and also published two Spanish language modules. Read on for additional details and direct web links of items that may be of the most interest to you!

- Introduction to Ocean Acoustics
www.meted.ucar.edu/oceans/acoustics/
- Community Hurricane Preparedness, 2nd Edition
www.meted.ucar.edu/hurricane/chp/
- QPF Verification: Challenges and Tools
www.meted.ucar.edu/hydro/verification/QPFverifi/
- Effective use of High-resolution Models
www.meted.ucar.edu/nwp/hires/
- Bias Correction of NWP Model Data
www.meted.ucar.edu/nwp/bias_correction/
- Multispectral Satellite Applications: RGB Products Explained
www.meted.ucar.edu/npoess/multispectral_topics/rgb/
- River Ice Processes Short Version
www.meted.ucar.edu/hydro/basic_int/river_ice/
- Writing TAFs for Ceilings and Visibility
www.meted.ucar.edu/dlac2/mod5/

We also enhanced the functionality of our Environmental Satellite Resource Center (ESRC) website with the release of version 2.0. The site is now also available in Spanish. Check it out, and even submit a local resource by visiting:
www.meted.ucar.edu/esrc/index.php

New Spanish language modules were also published this quarter including:

- Huracanes: Preparación de la comunidad, 2a Edición
www.meted.ucar.edu/hurricane/chp_es/
- S-290 Unidad 1: Ambiente de fuego
www.meted.ucar.edu/fire/s290/unit1_es/

As always, these materials are freely available to everyone, courtesy of our sponsors (NOAA's NWS, NESDIS GOES and NPOESS programs, Naval Meteorology and Oceanography Command, the Air Force Weather Agency, and the Meteorological Service of Canada).

Don't forget you'll need to register (free of charge) in order to access the modules. We welcome any comments, suggestions, or feedback you have on these or any other training offerings available through the MetEd website.

Greg Byrd
Professional Development Committee

NWA President's Message – Relax and Learn

The NWA's 2010 Annual Meeting (Oct. 2-7) in Tucson is almost here! I urge each of you to attend — you won't regret it. This year's theme, "*Fire and Ice: Science and Society*", aptly describes how the agenda was assembled. Kudos go to the local Program Committee headed by Erik Pytlak for their hard work in planning the meeting and creating a top notch agenda. The August newsletter contained the meeting agenda, and it is also available on the NWA website <http://www.nwas.org>. The depth and breadth of presentations is truly amazing. For those planning to attend, please review the agenda before coming.



If your schedule allows, come early to Tucson and join me and others at Saturday's annual Golf Outing benefiting NWA scholarships. It's always a good time. For more information on the golf outing, contact Betsy Kling (betsykling@wkyc.com). Also, a big thank you goes to Baron Services, Inc., WSI Corporation and Atlantic States Weather for sponsoring the Golf Outing; Baron Services, Inc. for underwriting the Broadcasters' Workshop and Vaisala, Inc. for sponsoring the Ice Breaker at the Arizona State Museum. For students planning to attend, please make time to attend Sunday's 3rd Annual Students' Workshop from noon till 9 p.m. This workshop will have lots of informative and practical presentations that will prepare you as you move forward in your career. There will be sessions on creating competitive resumes (...*don't forget to bring your resume!*), interview skills, career planning and leadership. There is an evening poster session, followed by a DVD review for students aspiring to work in broadcasting; bring a DVD of yourself doing a simulated weather broadcast for review by professional broadcast meteorologists.

For everyone attending I have this advice, relax, learn, have fun and meet new people! For some, making new acquaintances is easy; for others it's difficult. I challenge each of you to reach out to others, strike up a conversation with fellow attendees and participate in the hallway break gatherings.

One of those who will be attending this year's Annual Meeting in Tucson is the new Director of the National Weather Service's Storm Prediction Center (SPC), Dr. Russell Schneider. I've known Russ for much of my career in the NWS. He graduated from the University of Wisconsin, and is truly a down-to-earth good guy who cares deeply about severe weather and SPC's mission. I recently asked Russ a few questions that I hope will help you get to know him better. Watch for this interview article in an upcoming Newsletter. In the meantime, since Russ plans on attending our Annual Meeting in Tucson, please give him a warm welcome if you see him.

We were saddened to hear that the recent fires in Boulder County Colorado apparently have affected some members of the meteorological community. For those who have been adversely impacted by the wildfire, we are sorry for your loss.

Any questions or comments, please feel free to send an email to me: President@nwas.org.

Steve Zubrick
NWA President

Part II – The Near Future

*How to get the most out of your National Weather Association membership;
first-hand experiences from a student, for students*



Jordan Gerth, article author

I believe students should be aware of two significant areas of growth which will influence operational meteorology over the coming decade: emerging technologies and communication.

Emerging Technologies

While my interest in meteorology runs deep into my past, learning and thinking about ways computers and connectivity can help the field is partially responsible for my early career successes. I firmly believe the future of operational meteorology lies in emerging technology. The increase in computing power over the past decade led to great strides in high-resolution numerical weather prediction. With continued research and data assimilation projects, we are quickly approaching a crossroads in the field where human forecasts are no better than the model guidance.

The NWA Meteorological Satellite (MetSat) Applications Award is the only award in the meteorological community that recognizes student contributions to operational satellite meteorology. Emerging technologies make research to operations exercises more possible now than ever before. I encourage all students to find a way to use new methods to deliver satellite-derived products and imagery to the field in an operationally-beneficial manner. Thanks extend to Fran Holt and the NWA membership for continuing to sponsor this and other research-supporting awards that encourage a better understanding of our atmosphere for weather prediction purposes.

If your technical computing skills are lacking, consider taking a course in a computer science or geography

In the first part of this series (See the [April 2010 NWA Newsletter](#)), I provided an introduction to my background in the operational meteorology field and NWA. I now address how I envision the field evolving under the influence of increased technological resources and consumer demands: the likely, broad focus of the Association in the near future.

To get the most benefit from being a member of the NWA,

department. Anyone who attends the NWA Annual Meeting student session may be convinced that John Gordon, the enthusiastic Meteorologist In Charge at the NWS in Louisville, Ky., thinks the alphabet contains three letters: G, I and S. Certainly, Geographic Information Systems are an emerging tool with significant potential for advancing how warnings are issued and post-event surveys are conducted. We are just beginning to explore how social networking sites such as Facebook and Twitter fit into the weather information gathering and delivery paradigm that was previously teletype machines, faxes and phones.

Communication

Based on recent presentations at our annual meetings, there is little doubt that the NWA will continue to adapt and change over the coming years. Now more than ever, forecasters face an amount of incoming information so substantial that it is difficult to synthesize in the time it takes to prepare a forecast. An evolution from deterministic to probabilistic modeling along with gains in our radar network and satellite constellation will, without action, break our weather forecasting enterprise in the future, even if our dissemination methods are not overwhelmed. Not to mention the needs of the customers are changing.

If I was ever on the hiring end of a meteorologist intern position, one of my first interview questions would be: “What is the definition of the probability of precipitation?”

I recently posed this question to a number of university professors, senior forecasters and fellow students. To my surprise, I found no clear consensus. While there were similarities among all of the answers, I was concerned that no one answered what I believe is the perfect answer: “What the public perceives the probability of precipitation to mean.”



Corey Walton the 2009 NWA MetSat Award winner.

The NWS in Amarillo held a Decision Support Symposium in November 2009, focusing on extending weather forecasts into forecasting impacts of weather in hopes of better communicating information and hazards to the general public and targeted groups (emergency managers, etc.). Following this dialogue, already started by NWA members, will be critical to positioning upcoming and

See GERTH, page 5

Did You Know?

Digest Details

November 1976 saw the first *National Weather Digest* published with Fran Holt as the editor.

The first article "Operational Diagnostic Applications of Isentropic Analysis" was by Louis Uccellini.

Meeting Factoids

December 1976 marked the first NWA Annual Meeting which was at Andrews Air Force Base. The two-day event hosted 65 attendees.

October 1978 was the first joint NWA/American Meteorological Society meeting. The theme was "Weather Forecasting and Analysis"; it was at Silver Spring, Md.



GERTH from page 4

current graduates in new roles required of meteorologists. (See *presentations from the NWS Amarillo Decision Support Symposium* (www.srh.noaa.gov/ama/?n=dss_presentations)).

Young professionals will play a role in our future support systems, but can they share and advance their ideas effectively? In the final part of this series, I will focus on ways students and new members can make the most of a membership in the NWA while benefiting the community at large.

Jordan Gerth
Professional Development Committee

Editor's Note:

In Part III of this series, "Enhancing your Professional Potential" Jordan has the following recommendation. "If you go to the NWA Annual Meeting, and I strongly recommend you do, the best places to do this are around the refreshments table between sessions, and especially during the poster sessions."

Proposed NWA Bylaw Changes

When election ballots for 2011 NWA offices are distributed in November, you will be asked to vote on several Council approved Bylaw changes. These are needed to allow for more flexibility in using electronic technology to facilitate NWA operations. Regarding the Article III change to an individual's membership year, all members who joined before 2010 will continue to have a membership year of Jan. 1 to Dec. 31.

Steve Harned
Executive Director

ARTICLE III. MEMBERS

Reword third paragraph as follows to reflect rolling membership year for members joining in 2010 or later and a shorter period to renew after the end of a membership year for all:

Proposed:

New members will be assigned a rolling membership year, which will run for one year from the date of joining. Existing members who have not renewed their membership within **30 days** of the end of their membership year will receive an overdue notice. Existing members who have not renewed their membership within **60 days** of the end of their membership year will be dropped from the membership rolls.

ARTICLE IV. ELECTIVE AND APPOINTIVE OFFICERS

Reword seventh paragraph as follows by eliminating last sentence. Each annual meeting now has a formal program committee to assist the program chair.

The Vice President shall review the Bylaws of the Association each year and suggest appropriate changes to those Bylaws for approval by the Council and subsequent membership vote. ~~The Vice President shall work with the Annual Meeting Chairperson in planning the Annual Meeting of the Association.~~

ARTICLE VI. ELECTION OF OFFICERS AND COUNCILORS

To reflect electronic voting option, add wording in italics.

Election of Officers and Councilors shall be by mail **or electronic** ballot. The Nominating Committee shall

prepare, for review by the Council, a slate of Officer and Councilor candidates selected from the membership rolls. A ballot containing this slate of candidates shall be mailed to the membership in early November. Write-in candidates may then be added to the ballot. All ballots must be received by the Executive Director **by mail or electronically** before the end of December.

ARTICLE XIV. AMENDMENTS

To reflect electronic voting option and to make minor administrative adjustments, add wording in italics and remove the words with strikethroughs.

These Bylaws may be amended by ~~mail ballot~~ in the following manner:

A proposed amendment or revision shall be approved by the Council or submitted to the Secretary in a petition signed by at least 25 members in good standing. The proposed amendment shall be published **on the Web page and** in the Newsletter of the Association at least ~~60~~ **30** days before ballots for the Amendment are mailed.

The proposed amendment, accompanied by a ballot, shall be mailed to each member eligible to vote at least 30 days prior to the date ballots are to be counted. The ballots to be counted must be received **either electronically or by mail** by the Secretary **Executive Director** no later than 30 days after the above mailing date. The adoption of a proposed amendment shall require the affirmative vote of at least two-thirds of all members who cast ballots.

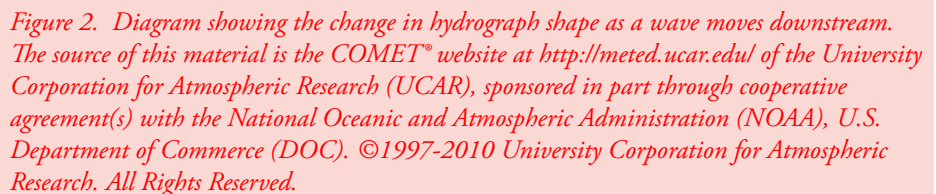
The Sacramento Soil Moisture Accounting Model (SAC-SMA) conceptually represents the behavior of water as it moves over and through the ground. It contains imaginary reservoirs of water that model how much water can be intercepted by various soil processes before other reservoirs begin to fill (Figure 1).

RFC hydrologists continually seek to calibrate the SAC-SMA parameters that define the surface runoff, inter-flow and groundwater characteristics for a river basin. These characteristics aren't physically based. Model parameters must be calibrated by determining which values would produce a simulation of flow that most closely matches the observed record.

River Forecast Center hydrologists must also estimate the change in a flood wave as it moves from point to point down the river, or the “routed flow.” When a wave of water moves downstream after a precipitation event, the wave tends to flatten; while the river may have risen five feet at an upstream point, it’s likely a smaller rise will be observed downstream. The wave is characterized by the “lag,” or the number of hours it takes for the wave crest to arrive from an upstream point, and the “attenuation,” or the typical amount of flattening that occurs. The lag and attenuation will often be different for a given site depending on the amount of water in the oncoming wave (Figure 2).

River forecasting is an evolving process. Advances in precipitation estimation and quantitative precipitation forecasting will help hydrologists make better forecasts, and emerging science will provide improved methods and techniques for modeling the behavior of water.

**Christine McGehee, Hydrologist, NWS
Southeast River Forecast Center
NWA Professional Development Committee**



He and retired Fire Behavior Analyst Larry McCoy watched a smoke plume transform into a fireball/flaming front as the wildfire advanced into the town of Los Alamos. They later listened to radio traffic as firefighters called for a retreat block by block and eventually to the town golf course.

Retired IMET Bob "Berky" Berkovitz remembers arriving at the Cerro Grande Fire Incident Command Post (ICP) only to evacuate 30 minutes later as the wind blew the fire in the post's direction. Officials permitted him and the firefighters back into the ICP several hours later. Bob was able to set up his equipment and begin weather watch and forecast duties that evening. He and fellow IMET Mike Chamberlain continued to support the Incident Command Teams and respond to international media attention.

Attention turned to the Pacific Northwest, Northern Rockies and Alaska during the summer. Nine wildfires throughout the U.S. each burned at least 130,000 acres that season. The Valley Complex Wildfire in Montana burned 292,070 acres with firefighters observing "firestorms" during the height of this event.

In mid-July, a brief surge of monsoon moisture caused numerous thunderstorms and fire starts across central Idaho. One of the largest was Burgdorf Junction located near Burgdorf, Idaho, in the Payette National Forest. IMET Scott Birch (Western Region Headquarters) was the first IMET dispatched to the Burgdorf Junction Fire on July 18.

The fire made a large run in dry and windy conditions on July 22. Strong winds and approaching flames forced the evacuation of a fire lookout tower in the area. A Fire Remote Automatic Weather Station (RAW) burned next to the lookout tower, but helicopter water drops allowed the tower to escape damage.

The fire camp was remote and only used generator power. For the first several weeks there were no phone lines nor showers at camp. Satellite was the only communications available while Scott supported the fire. Five hundred U.S. Army soldiers from the 4th Infantry Division at Fort Hood would be dispatched to help the firefighters in late July. Burgdorf Junction



would burn for several months in the 2000 fire season. Many IMETS from across the NWS supported this incident, and President Bill Clinton toured the fire in August.

This season changed the way land management agencies fought wildfires and changed government policy pertaining to land use, in particular the complexity of the urban interface and ecosystem sustainability. Wildfires play an essential role in the ecological process and are natural change agents which need to be incorporated into planning processes (2001 Federal Fire Policy).

This season also changed the way the NWS supports our partners in the Fire Weather Service Program. The number of certified IMETs increased from 35 in 2000 to 85 in 2010. We now dispatch IMETs to less complex or Type 2 wildfires on a regular basis. National Oceanic and Atmospheric Administration's Earth Systems Research Laboratory developed the Advanced Weather Interactive Processing System (AWIPS) emulator software known as FX-Net. Prior to FX-Net, IMETs used forecast analysis programs unique to the program and difficult to maintain. The NWS purchased two-way satellite dishes in 2002. (Prior to this equipment upgrade, IMETs needed a phone line to receive a regular data feed of weather and water information.)

The NWS considers decision support as its most vital service to partners such as emergency managers and fire land managers. IMETs practiced decision support principles and skills when our fire land management partners needed us most. Thank you to all who served up to 18 hours a day and one to two weeks per dispatch during that historic season.

NWA Specialized Operational Services Committee

NWA Sponsored Annual Meetings & Conferences

Oct. 2–7: 35th Annual Meeting of the National Weather Association
will be held at the Marriott University Park Hotel in Tucson, Ariz.
www.nwas.org

Oct. 24–26: The National Flood Workshop
This conference, sponsored by the Weather Research Center and many other agencies including the NWA, will be held in Houston, Texas.
www.wxresearch.com/nfw/

March 31–April 2, 2011: 15th Annual Severe Storms & Doppler Radar Conference
Sponsored by the Central Iowa NWA Chapter, it will be at the Courtyard by Marriott in Ankeny, Iowa.
www.iowa-nwa.com/conference/

Other Meetings & Conferences

Oct. 26–27: 2nd WFO Amarillo Decision Support Symposium
This symposium will focus on preparedness, societal impacts and relationships which help improve the Decision Support Services offered by the NWS. Hosted by the NWS in Amarillo.
www.srh.noaa.gov/ama/?n=dss

Nov. 2–4: 14th Annual Great Divide Workshop
This workshop will be at the Crowne Plaza in Billings, Mont. www.wrth.noaa.gov/byz/greatdivide/welcome.php

Nov. 3–5: 12th Northeast Regional Operational Workshop (NROW)
This will be held at the CSTEM Auditorium, on the University at Albany Campus. The workshop will be co-sponsored by the NWS Office at Albany, N.Y., and the Department of Atmospheric and Environmental Sciences (DAES), University at Albany.
www.erh.noaa.gov/aly/NROW/nrow12.htm

Jan. 23–27, 2011: 91st Annual Meeting of the American Meteorological Society
This Meeting will be at the Washington State Convention Center in Seattle, Wash. www.ametsoc.org/meet/annual/

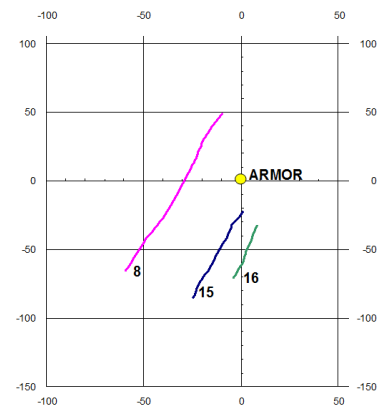
A New Learning Opportunity from the EJOM

NWA EJOM Paper 2010-EJ04: "A Dual-Polarization Investigation of Tornado-Warned Cells Associated with Hurricane Rita (2005)" was recently added to the NWA *Electronic Journal of Operational Meteorology* site.

The authors are Christina C. Crowe (NWS-Springfield, MO), Walter A. Petersen (NASA-Marshall Spaceflight Center), Lawrence D. Carey, and Daniel J. Cecil (both of University Alabama Huntsville). This paper takes a first step in analyzing the dual-polarimetric characteristics of potentially tornadic storms in a landfalling tropical cyclone system. Findings suggest that while standard reflectivity features are quite different in tropical environments than in Midwest tornado outbreaks, dual-polarimetric radar features are similar in both instances. This may provide tornadic indicators that would help in the warning decision process during landfalling tropical cyclones, which are infrequent and challenging events.

Dr. Marty Baxter
EJOM Assistant Editor

Visit <http://www.nwas.org/ej/2010/2010.php> for this and other EJOM papers.



Track of three storms used for dual-pol study and the location of ARMOR. Grid units are in km. From "A Dual-Polarization Investigation of Tornado-Warned Cells Associated with Hurricane Rita (2005)."

Dates 2 Remember

Oct. 2-7: 35th National Weather Association Annual Meeting, Tucson, Ariz.

Oct. 25: Applications for both Arthur Pike and Cassens/Phillups Family Undergraduate scholarships are due

Oct. 24-26: National Flood Workshop, Houston, Texas

Oct. 27-27: 2nd WFO Amarillo Decision Support Symposium, Amarillo, Texas

Nov. 2-4: 14th Great Divide Weather Workshop, Billings, Mont.

Nov. 3-5: 12th Northeast Regional Operation Workshop, Albany, N.Y.

Jan. 23-27, 2011: 91st American Meteorological Society Annual Meeting

Oct. 16-20, 2011: 36th National Weather Association Annual Meeting, Birmingham, Ala.

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Submit newsletter items directly to the NWA office or to nwanewsletter@nwas.org. Material received by the 25th will be considered for the next month's issue.

Members receive the Newsletter and *National Weather Digest* as part of their regular, student or corporate membership privileges. Printed Newsletter subscriptions are available for \$25 per year plus extra shipping costs outside U.S. Single copies are \$3. **Address, phone number, email and affiliation changes can now be made online at the member portal.**

Supporting and promoting excellence in operational meteorology and related activities since 1975.

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