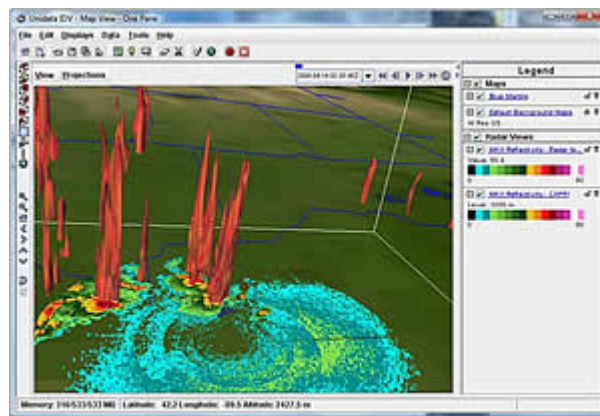


Using IDV in an Undergraduate Radar and Satellite Meteorology Course

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Three years ago, a new course was offered by the Department of Atmospheric and Oceanic Sciences (AOS) at the University of Wisconsin-Madison. This upper-level undergraduate elective course, entitled "AOS 441: Radar and Satellite Meteorology," provides an overview of commonly used atmospheric remote sensing instruments. Besides providing a basic physical foundation for remote sensing, the course also stresses radar and satellite data applications, and students are heavily exposed to quantitative data analysis using remote sensing data.

Since this course was new in 2006 and had to be designed from the ground up, a convenient opportunity was created to critically think about what data analysis and visualization software could be best used in the classroom. It quickly became clear that the Integrated Data Viewer (IDV) would be the perfect tool to visualize and probe radar and satellite data. The IDV inherently possesses numerous attributes from an instruction standpoint that make it very amenable for classroom use. The arguably biggest strength of the IDV is its user-friendly setup that allows students to quickly and easily explore radar and satellite data via its intuitive, window-driven interface. Furthermore, it can automatically ingest NEXRAD and GOES data without the need for frustrating data conversions or



The 50 dBZ radar reflectivity isosurface overlaid on the base radar reflectivity for a severe hailstorm in Wisconsin.



other pre-processing steps that detract from instruction and waste precious classroom time. Students are able to explore actual data within the first few minutes of being introduced to the IDV, and that sets the stage for a semester filled with student-centered, data-driven instruction. Other strengths of the IDV are also exploited, including the ability to easily animate time series of data and seamlessly overlay coincident radar and

satellite data (and gridded model data or other observations as well) to compare what each instrument “sees” for various events of interest. The IDV also allows the radar data to be visualized in a 3-D framework, thus providing a different perspective that most students have not been exposed to in previous courses or experience. The ability to quantitatively explore the data is at the students’ fingertips with various built-in IDV functionalities, such as identifying actual radar reflectivity or satellite brightness temperature values using the IDV data probe, measuring the expansion rate of a severe convective storm’s anvil in infrared satellite data using the IDV measuring tool, or creating a radar-based precipitation estimate by applying Z-R relationships to radar reflectivity data using the IDV formula tool. Last, the IDV’s bundling capability has proven to be an invaluable instructional asset, as it allows the instructor to pre-package case studies and exercises for the students to create an even more efficient classroom. In fact, a semester-long radar and satellite IDV-centric curriculum is being developed via IDV bundles that can be utilized in future semesters and shared with other interested instructors.

Overall, our experiences with the IDV in the classroom have been very positive, and student evaluations have consistently credited the IDV as being a crucial, exciting, and practical component of the course.

David Fulker Receives the Cleveland Abbe Award

31 January 2008

An Open Letter to Unidata’s Many Friends

New Orleans was chilly and still reeling from Katrina, but the ‘08 annual meeting of the American Meteorological Society was—for me personally—a warm and vital event. As this year’s recipient of the [AMS Cleveland Abbe Award](#), I was gratified not only by the generosity of the citation but also by congratulations from a remarkable array of current and former colleagues and by abundant evidence of Unidata’s ongoing vigor.

In selecting sessions to attend, I was tempted to follow the buzz that surrounds current discourse on climate; I can’t resist feelings of pride about being near so many Nobel Prize winners! However, I chose instead to learn what I could about current advances—in technology, research, and education—that appear to be enabled or enhanced by Unidata products and services. Though it’s certainly an undercount, I quickly found some 30 presentations or posters where the abstract referred to an aspect of Unidata (NetCDF, IDV, THREDDS) or a closely related endeavor (such as LEAD and OpenDAP). I left the conference with three perspectives that I’d like to share.

First and foremost, my award citation is at least as much a reflection of other people’s work as my own. Every instance of “visionary foresight” or “pioneering information technology” in my career has been shaped in critical ways by the knowledge and ingenuity of others, especially those who’ve contributed energy and intellect toward the enduring success of Unidata. To keep the published version of this letter at a reasonable

length, there is a [separate list of appreciations](#) which includes a few of the many names I would like to name.

My second perspective is really a reflection on meteorology's rich history of innovation, inspired by my reading about Cleveland Abbe. Beyond his being the first National Weather Service Director, I was interested to learn how he exploited advanced technology from the mid-1800s—the telegraph—as the basis for a network in which coordinated, daily measurements were collected and compiled into public weather forecasts. I think the similarity of this to Unidata/IDD is a delightful coincidence!

The third perspective I gained in New Orleans is that Unidata continues to be a significant force for creativity, even as key elements become less visible due to their nearly universal acceptance. For this state of affairs, we all owe immense thanks to Cliff Jacobs and others for NSF funding and guidance as well as to Mohan Ramamurthy for continuing and expanding the Unidata spirit of innovation and service.

Cordially yours,

Dave Fulker



The second panel shows UCAR staff member Russ Rew with his wife Julie as they prepare to roll up their sleeves and get to work during one of the AMS-organized work days for Habitat for Humanity. Later in the day, according to Russ, their clothing was decorated with purple paint. In the next panel, longtime Unidata community member, Rich Clark receives the Teaching Excellence Award from Dr. Anthes, and next Dave shows off his award to folks back in Boulder. In the last panel, Andrew Jackson tips his hat to AMS attendees in Jackson Square.

CONDUIT Meeting in New Orleans

As often happens, CONDUIT principals gathered during the AMS Annual meeting to consider its status, address some of the challenges it faces, and discuss its future.

CONDUIT (Cooperative Opportunity for NCEP Data Using IDD Technology) is a project that makes high resolution model data sets available to universities using Unidata's LDM/IDD technology.



Unidata staff made a presentation detailing Unidata's support for the project while NCEP's Brent Gordon provided a presentation describing the project's current status. The Unidata Users Committee as representatives of the community, will be asked to take responsibility for polling the community to

determine which new data sets might be added to CONDUIT and to determine which might be eliminated. The committee will begin discussing the process during its next meeting in early April. The information gleaned from the polling process will help the CONDUIT group determine how to update and streamline data provided. Additional information is available [here](#).

News Briefs

DeSouza Award Nominations

The Unidata Users Committee invites you to submit nominations for the Russell L. DeSouza Award for Outstanding Community Service. This Community Service Award honors individuals whose energy, expertise, and active involvement enable the Unidata Program to better serve the geosciences. See:

<http://my.unidata.ucar.edu/community/aboutRLDaward.html>. Send nominations to nominations@unidata.ucar.edu. Please provide a brief perspective/description of the nominee's contributions to the Unidata community. The deadline for receiving nominations is 10 March 2008.

Unidata Equipment Awards

Under sponsorship from the National Science Foundation, the Unidata Program Center (UPC) announces the 2008 Unidata Community Equipment Awards solicitation, described below, along with the proposal submission requirements. A total of \$100,000, including UCAR overhead, is available for awards this year. Proposals for amounts up to \$20,000 will be considered. The deadline date for submitting proposals is **10 March 2008**. Notification of award status will be made by mid-May, 2008. More information and the entire RFP is available [here](#).