

INCREASING ACCESS TO AWIPS-II IN THE UNIDATA COMMUNITY AND AT THE UNIVERSITY OF MISSOURI

Bohumil Svoma, Patrick S. Market, Anthony R. Lupo, and Neil I. Fox

Funding was requested to update a portion of the Weather Analysis and Visualization (WAV) Laboratory on the University of Missouri campus. Six (6) client machines were able to be replaced completely, and one (1) high end server was purchased to host AWIPS-II and a concurrent EDEX server. All of these tasks have been successfully completed as of this writing, except for the final pairing of the LDM and the EDEX server. This is anticipated to be completed during the first full week of July.

The equipment acquired using the funding from the Unidata grant also allowed us to install the 64-bit version of the Warning Decision Support System – Integrated Information (WDSS-II) and serve it out to the client machines in the computing lab. WDSS-II is used to process and analyze raw radar data and run nowcasts. The added capacity of the new server also allows for the use of Matlab with large datasets, in particular the development of algorithms for the analysis of multiple high-resolution radar images. These added capabilities have enabled the development of a new graduate class offering of Advanced Radar Meteorology wherein students were required to process and analyze thoroughly dual-polarization Doppler radar data. A number of the graduate students will be using the software and methods learnt during the class in their research projects.

Python is a powerful and emerging programming language in the atmospheric sciences. A graduate level course was offered to introduce students to mapping and statistical analysis using Python. This course was the first formal introduction to Python for all atmospheric science graduate students enrolled. The computing power provided by the award has made analysis of many large datasets feasible (e.g., hourly isobaric High-Resolution Rapid Refresh output). At least six students are continuing to use Python and the acquired equipment in their own research.

Classwork in Thermodynamics and Dynamics is supported by the equipment. Dr. Tony Lupo's Ph.D. student used the equipment to study blocking events contributing to his Ph.D. and related articles in ISI ranked journals (e.g., Jensen and Lupo 2014; Jensen 2015). Dr. Lupo's M.S. student is using the data available through the equipment to study precipitation cases for climatological analysis.

Publications:

- Jensen, A.D., 2015: A dynamic analysis of a record breaking winter season blocking event. *Adv. Meteorology, Special Issue: Large-scale Dynamics, Anomalous Flows, and Teleconnections*, in press.
- Jensen, A.D., and A.R. Lupo, 2014: The Role of Deformation and Other Quantities in an Equation for Enstrophy as Applied to Atmospheric Blocking. *Dynamics of Atmospheres and Ocean*, <http://dx.doi.org/10.1016/j.dynatmoce.2014.03.004>