



Cooperative Institute for Precipitation Systems

This Period in CIPS: January – March 2007

Upcoming Conferences and Presentations

Presentations are being prepared for the Missouri Academy of Science Meeting in St. Joseph, MO: 21 April 2007.

A Process-Oriented Observational Study of Snowfall Potential in the Central United States: Chad M. Gravelle, Charles E. Graves, and Scott M. Rochette

A Diagnostic Analysis of Significant Cold Season Elevated Thunderstorms: Erin E. Snively and Charles E. Graves

Composite Analyses of Coupled Upper-Level Jet Streaks East of the Rocky Mountains: Weak Dynamic Cases: Chad M. Gravelle, Scott M. Rochette, Thomas A. Niziol, and Charles E. Graves

A Comparison of the Characteristics Associated with a Severe-Producing and Heavy Rainfall-Producing Mesoscale Convective System: Stephen A. Rodriguez, Charles E. Graves, and Ron W. Przybylinski

Submitted Articles

Using work performed under a COMET Partners grant, the following article is being revised for publication in the National Weather Digest:

Graves, C. E., R. A. Wolf, J. T. Moore, J. A. Zogg, and B. L. Mickelson, 2007: Analysis of the 3-4 June 2002 extreme rainfall event over Iowa and Illinois. *Natl. Wea. Dig.*, **31**, 83-102.

CIPS Team Notes

On 10 February Saint Louis University and the National Weather Service Sponsored a Severe Weather Workshop. The Workshop was held on the Saint Louis University campus. Numerous talks were presented including a flash flooding presentation by Charles Graves. For a list of presentation titles and presenters visit the Severe Weather Workshop webpage.

Steve Chiswell and Jeff McWhirter from UNIDATA were invited by Charles Graves to give several presentations within the Department, but also to help reconfigure and streamline our current software for easier installations of future versions. The presentations were an overview of basic UNIDATA functions and products. One presentation was a Department wide seminar while others included instructional/hands-on learning of GEMPAK and IDV for graduate students and undergraduate students. We appreciate their valuable time and expertise, which has allowed a better understanding of some new software features. Thank You Gentlemen!

A new elevator is being constructed outside of O'Neil Hall. This elevator will allow easier access to all floors of the Earth and Atmospheric Sciences Department within O'Neil Hall. The elevator should be fully operational this summer.

The meteorology department is currently hiring for one position: Assistant Professor of Meteorology. This position will likely be filled before summer.

Dr. James T. Moore is the recipient of the 2007 Missouri Academy of Science Most Distinguished Scientist Award. Charles Graves will receive the award on Dr. Moore's behalf on 21 April.

Dr. Charles Graves will be giving a presentation at COMAP (COMET) on 11 June. The title is: QG Theory: A Review of Basic Concepts.

The purchase of two ReadyNAS (Network Attached Storage) units has allowed CIPS to begin storing 10 years of surface, upper-air, and NARR data in GEMPAK form for case studies, climatological investigations, and various other research endeavors.

With the help from Steve Chiswell and Jeff McWhirter several shortcuts were realized in GEMPAK for research purposes that will come in handy in the near future for graduate students as well as using IDV to create case studies using real-time data.

CIPS team members are in the beginning stages of contemplating possible presentation topics and titles for the 32nd National Weather Service Annual Meeting in Reno, Nevada. Check back at the end of June for a list of presentation titles and authors.

CIPS team members are continuing to collaborate with Wes Junker (HPC contractor) and Matt Kelsch (UCAR/COMET) with the investigation of the Kansas turnpike flash flood case of August 30-31 2004. A paper will culminate from this collaboration in the near future.

CIPS Team News

Jaime Poole continues to work toward the completion of her Ph.D. She has passed her oral exam and is now awaiting the completion of her dissertation and defense. Currently she is using the Weather Research and Forecasting (WRF) model to run simulations of elevated thunderstorm events. The focus of her research is to investigate numerous cases, each representing a different distance between the area of elevated convection

and the associated surface boundary, in order to identify possible initiation and propagation characteristics of elevated storm systems.

Mike Paddock is continuing his Ph.D. studies with emphasis on heavy rainfall proximity soundings. He has preliminary results, utilizing a dataset of thirty-three cases for rainfall of four inches or greater, forty-seven cases for rainfall of one-two inches, and hundreds of no-rainfall soundings. All soundings are from 2003-2005. Mike is using Fred Glass (Lead Forecaster, St. Louis NWS) and Wes Junker (HPC Contractor) as consultants for this study. He is also volunteering at the St. Louis NWS Forecast Office. Mike is also preparing for the written and oral portion of the Ph.D. exam, which will be in April.

Adam Pasch is continuing his Ph.D. studies with emphasis on high resolution model precipitation verification. Adam is using a modified Ebert-McBride Technique to do object oriented verifications. The dataset he is using comes from the Spring Program which consists of three different versions of the WRF model. Adam is currently fine-tuning his research code. He has completed the written portion of the Ph.D. exam and is now awaiting the oral exam portion.

Emily Eisenacher is still in the beginning stages of the Ph.D. program. She is studying the environment and radar characteristics of six case studies. The investigation includes multi-banding versus single-banding, patterns of evolution of mesoscale processes, and band orientation and rotation compared to the band motion. She will also compare WRF model simulated radar reflectivity with the actual radar reflectivity. Emily is also the President of the Saint Louis University Chapter of the American Meteorological Society.

Chad Gravelle is investigating snowfall potential in the Midwest based on system classification. He is collaborating with Fred Glass (Lead Forecaster, St. Louis NWS) on this study. Chad is producing a five year database of all snowfall events in the Midwest and from there will reduce the dataset to approximately 150 cases based on certain investigative criteria. He will compare/contrast observed snowfall, associated with these cases, with currently developed conceptual models. Chad anticipates graduating with his Master's degree in the summer.

Erin Snavely is investigating cool-season elevated thunderstorms. She will be looking at principle components to determine which parameters are significant and if there are north/south biases, east/west biases, large/small spread, etc. Erin currently has fifteen cases in her database and has pinpointed the initiation and mature time periods as well as their locations. She is now generating composites for various time periods (6 hours before, initiation, and mature). Erin anticipates graduating in the summer.

Stephen Rodriguez is examining two bow echo cases. Both of which impacted the St. Louis Metro area. One bow echo moved straight through the area while the second stopped and produced heavy rainfall. He has completed the damage assessment, upper-air and surface analyses, observational and model sounding analyses, and an examination of wind profiler data. Stephen is currently employed by the National Weather Service in the Student Career Experience Program (SCEP). Stephen will graduate this summer.