

HEPEX Workshop Agenda
Foothills Lab, NCAR, Boulder, Colorado
19 – 22 July 2005

Day 1: Tuesday, 19 July

- 8:00 am **Registration and refreshments**
NCAR Foothills Laboratory, Building 2, Cafeteria Atrium
- 8:30 am **WELCOMING REMARKS, OBJECTIVE, AND SCHEDULE**
NCAR Foothills Laboratory, Building 2, Room 1022
(John Schaake, Roberto Buizza, Martyn Clark, and Tom Hamill)
- 8:45 am John Schaake and Roberto Buizza: An overview of the Hydrological Ensemble Prediction Experiment (HEPEX)
- 9:15 am **SESSION 1: Weather and climate forecasting for hydrologic predictions**
- 9:15 am Zoltan Toth and L. LeFavre: Hydrologic applications of the North American Ensemble Forecast System
- 9:30 am Tom Hamill and Jeff Whitaker: Using reforecasts to calibrate probabilistic weather predictions
- 9:45 am Roberto Buizza, David Richardson, Renate Hagedorn, and Philippe Bougeault: TIGGE (the THORPEX Interactive Grand Global Ensemble)
- 10:00 am COFFEE BREAK + poster session setup
- 10:30 am **SESSION 1 continues**
- 10:30 am Shaleen Jain and Gary T. Bates : Predictability of spring warmups, snowmelt and streamflow peaks in western United States: Prospects for the use of CDC Reforecast Ensembles
- 10:45 am Steve Mullen, Matt Wandishin, Mike Baldwin, and John Cortinas: Short-range ensemble forecasts of precipitation type
- 11:00 am Ray Arritt, Bill Gutowski, and E. S. Takle: Multi-model ensembles for seasonal prediction of precipitation.
- 11:15 am **DISCUSSION OF SESSION 1**
- 12:00 pm LUNCH (Foothills Laboratory Cafeteria, Building 2)
- 1:15 pm **SESSION 2: Data assimilation and modeling techniques for hydrometeorological prediction**
- 1:15 pm Newsha Ajami: Confronting total uncertainty in Hydrologic Prediction: An Integrated Bayesian Multi-Model Hydrologic Ensemble Prediction System

- 1:30 pm Milija Zupanski : Non-Gaussian error statistics and ensemble data assimilation
- 1:45 pm Dusanka Zupanski : Can we estimate and reduce major sources of forecast uncertainties employing a unified framework?
- 2:00 pm Suxia Liu: Another look at the Hydrological Ensemble Prediction : Taking the prediction of instream flow requirements as an example
- 2:15 pm COFFEE BREAK (+ posters)
- 2:45 pm DISCUSSION of the charge given to breakout groups
- 3:00 pm **BREAKOUT GROUPS**
 Rooms – Foothills Laboratory, Building 2, Room 1003
 Foothills Laboratory, Building 3, Room 2072
 Foothills Laboratory, Building 3, Room 1067
- 5:00 pm ADJOURN for the day.

Day 2: Wednesday, 20 July

- 8:00 am Refreshments
- 8:30 am **REPORTS FROM BREAKOUT GROUPS / DISCUSSION**
- 9:30 am **SESSION 2: Data assimilation and modeling techniques for hydrometeorological prediction (continued).**
- 9:30 am Xingguo Mo: Parameter conditioning and prediction uncertainties of the LISFLOOD-WB distributed hydrological model
- 9:45 am Hamid Moradkhani: Another View to Hydrologic Ensemble Prediction via Sequential Monte Carlo Methods
- 10:00 am COFFEE BREAK (+ posters)
- 10.30 am Jasper Vrugt: Real-time Data Assimilation for Operational Ensemble Streamflow Forecasting
- 10:45 am Andrew Slater: Snow data assimilation via an ensemble Kalman filter
- 11:00 am **DISCUSSION**
- 12:00 pm LUNCH (Foothills Laboratory Cafeteria, Building 2)
- 1:15 pm **SESSION 3: Meteo- and hydrological applications**

- 1:15 pm David Kingsmill, Brooks Martner, Jessica Lundquist, Dave Jorgensen, Ken Howard, Steve Koch, and Paul Schultz: The NOAA Hydrometeorological Testbed Program: overview and progress to date.
- 1:30 pm Kevin Werner and Dave Brandon: Experimental forecast techniques at the CBRFC.
- 1:45 pm Lifeng Luo: A realtime seasonal hydrologic forecast system for the eastern US.
- 2:00 pm Jutta Thielen-del Pozo, M.H. Ramos, J. Bartholmes, B. Gouweleeuw, F. Pappenberger, GF Franchello, J. v.d.v Knijff, and A. de Roo : Making use of flood ensemble prediction system in the European Flood Alert System (EFAS)
- 2:15 pm Roni Avissar, Francisco Munoz, Somnath Baidya Roy and Kristen Goris: Using Super-Ensembles for Estimating Hydrologic Variables in the Region Affected by the North American Monsoon
- 2:30 pm Kristie Franz, John Schaake, Roberto Buizza, Steve Mullen : Proposal of a THORPEX/HEPEX Hydrologic Applications Project (THEPS)
- 2:45 pm COFFEE BREAK (+ posters)
- 3:15 pm **BREAKOUT GROUPS**
Rooms – Foothills Laboratory, Building 2, Room 1002
Foothills Laboratory, Building 2, Room 1003
Foothills Laboratory, Building 3, Room 2072
- 5:00 pm ADJOURN for the day.
- 7:00 pm **GROUP DINNER** – (*Please note – The registration fee does not cover the cost of the dinner)
The Mediterranean Restaurant
1002 Walnut
Boulder, CO, 303-444-5335

Day 3: Thursday, 21 July

- 8:00 am Refreshments
- 8:30 am **SESSION 3: Meteo- and hydrological applications, continued.**
- 8:30 am Robert K. Hartman: Use of Weather and Climate Forecast Information in the California-Nevada River Forecast Center (CNRFC)
- 8:45 am Allen Bradley and John Schaake: GAPP Ensemble Experiments Initiative
- 9:00 am Martyn Clark: Streamflow forecasting in snowmelt-dominated basins
- 9:15 am V. Fortin, A. Pietroniro and P. Pellerin: A Canadian Community Hydrologic Prediction System.

- 9:30 am Andrea J. Ray and Robert S. Webb: Hydrologic predictions in the context of regional decision support systems: User studies
- 9:45 am Lauren Hay, Martyn Clark, and George Leavesley: Hydrologic Predictability in Mountainous Terrain
- 10:00 am COFFEE BREAK (+ posters)
- 10:30 am Andrew Wood, Theodore Bohn, Ali Akanda, and Dennis Lettenmaier: A multi-model hydrologic ensemble for seasonal streamflow forecasting in the western U.S.
- 10:45 am Carlos Tucci: Flow Forecasting in Large Basins in Brazil
- 11:00 am Thomas Pagano, Jennifer Erxleben, Tom Perkins, Phil Pasteris: Operational Simulation Model Forecasting at the NRCS National Water and Climate Center
- 11:15 am Balaji Rajagopalan, Martyn Clark, Katrina Grantz, Satish Regonda: Incorporating Large-Scale Climate Information in Water Resources
- 11:30 am John Schaake: Ensemble Streamflow Prediction by the National Weather Service (NWS)
- 11:45 am M Gopalakrishna: HEPEX – Perspectives of users and their anticipations.
- 12:00 pm **DISCUSSION OF Session 3**
- 12:30 pm LUNCH
- 2:00 pm **PLENARY SESSION**
- 2:00 pm Reports from Working Groups / DISCUSSION
- 3:15 pm COFFEE BREAK
- 3:45 pm DISCUSSION
- 5:00 pm MEETING ADJOURNS

Day 4: Friday, 22 July: Special HEPEX planning meeting [for those intending to be actively involved in the HEPEX project]

- 9:00 am PLANNING MEETING
Rooms – Foothills Laboratory, Building 2, Room 1022
Foothills Laboratory, Building 2, Room 1003

Agenda items:

- (1) Current HEPEX status
- (2) User perspectives
- (3) HEPEX/TIGGE interaction
- (4) Regional HEPEX projects
- (5) Supporting data sets
- (6) Evolution of a coupled forecasting system.
- (7) Publications resulting from the workshop?
- (8) Future workshops, special sessions, and other activities
- (9) HEPEX organization
- (10) Milestones
- (11) Action Items

12:00 pm MEETING ADJOURNS

Posters:

Kevin Werner and Dave Brandon : Using CFS model output in the NWSRFS

M. Saïd, A.-C. Favre, H. Massé, V. Fortin, L. Perreault, N. Evora: Using Bayesian Model Averaging to calibrate meteorological forecast ensembles: Application to the forecasts of Environment Canada

Luc Perreault, Noël Dacruz Evora, Anne-Catherine Favre, and Vincent Fortin: Experimenting calibration methods on Canadian meteorological ensemble forecasts for uncertainty assessment of Hydro-Quebec streamflow predictions

Allen Bradley, Anton Kruger, and Stuart Schwartz : Verification of AHPS Ensemble Streamflow Predictions for the North Central River Forecast Center

Huiling Yuan: Calibration of Probabilistic Quantitative Precipitation Forecasts from the NCEP RSM system over Hydrologic Regions

Kristie Franz: An evaluation of an energy-balance snow model for ensemble streamflow forecasting