



WL|delft hydraulics

Second ACTIF workshop on Quantification, reduction and dissemination of uncertainty in flood forecasting

Programme

22 to 23 November 2004

WL|Delft Hydraulics, Delft, The Netherlands

Monday 22 November 2004

08:00-09:00	Registration
09:00-09.15	Welcome
09:15-09:30	P. Balabanis, European Union
09:30-10:00	Stream flow forecasts in Brazil based on Quantitative Precipitation Forecasts (QPF) Walter Collischonn, Instituto Pesquisas Hidráulicas, Universidade Federal do Rio Grande do Sul, Brazil
10:00-10:30	Evaluation of Quantitative Precipitation Forecasts (QPF) from numerical models and coupled atmospheric hydrological modelling for flood simulation Charles Lin, Department of Atmospheric and Oceanic Sciences, McGill University, Canada
10:30-11:00	Coffee break
11:00-11.30	A linked atmospheric-hydrological model for the Great Lakes Nick Kouwen, Department of Civil Engineering, University of Waterloo, Canada
11:30-11:50	Flood forecasting practice in northern California Maurice Roos, California Department of Water Resources Sacramento, USA
11:50-12:10	Treating uncertainty in flood forecasting – Development, uptake and barriers Rhaman Khatibi, Academic visitor of University of Oxford, UK
12.15-13.15	Lunch
13.15-15:30	ACTIF best practice papers Chris Collier, Inger Solheim, Ezio Todini, Albrecht Weerts

- 15:30-16:00** **Tea break**
- Chairman:** Paul Samuels
- 16:00-16.20** **Assessing uncertainty in patterns of flood inundation in real time**
Keith Beven, Peter Young, Renata Romanowicz, and Florian Pappenberger,
University of Lancaster, UK
- 16:20-16:40** **Towards stochastic fluvial forecasting: Investigating the uncertainty of
running precipitation forecasts through hydrological models into
economic impact models**
Clive Pierce, Neil Bowler, Alan Seed and Bob Moore, Meteorological
Office, UK
- 16:40-17:00** **Uncertainties in flood simulation models**
L. Timbe and P. Willems, Department of Civil Engineering, Leuven
University, Belgium
- 17:00-17:30** **Quantifying uncertainty in stream flow forecasts: Application to an
HBV model based forecasting and flood warning routine**
Elin Langsholt, Norwegian Water Resources and Energy Directorate,
Norway
- 17:30-18:00** **Analysis of the 1997 new year's flood inflow forecast errors for Folsom
reservoir, California**
David S. Bowles and Sanjay S. Chauhan, Utah State University, USA
- 20:00** **Conference dinner at the Delft Centre**

Tuesday 23 November 2004

(1) Data assimilation

Chairman: Inger Solheim

- 9:00-9:20 Stochastic state-space model flow errors arising from radar and rain gauge estimates of rainfall**
G. L. Robbins and C. G Collier, School of Environment and Life Sciences, University of Salford, UK
- 9:20-9:40 Evaluating the impact of model formulation and structure on hydrological simulation uncertainty**
M.B.Butts, J.T. Payne, J. Overgaard, M. Kristensen and H. Madsen, DHI Water & Environment, Denmark
- 9:40-10:00 Ensemble Kalman filters for Sobek river models: A case study for Maxau-IJssel on the River Rhine**
G. El-Sherafy, WL|Delft Hydraulics, The Netherlands
- 10:00-10:20 A stochastic framework for the propagation of uncertainties and data assimilation**
M.B.Butts, A-K. Falk, H. Madsen and J Hartnack, DHI Water & Environment, Denmark
- 10:20-10:50 Coffee break**
- 10:50-11:10 Assimilating Doppler radial winds into high resolution Numerical Weather Prediction (NWP) models for Quantitative Precipitation Forecasts (QPF)**
C. G. Collier, F. Rihan and F. Davies, School of Environment and Life Sciences, University of Salford, UK
- 11:10-11:30 Black box forecasting models and uncertainty in the case of the river Rhine**
Paul Torfs, University of Wageningen, The Netherlands
- 11:30-11:50 Improved flood forecasting and the possible role of satellite images**
Cor-Jan Vermeulen, Jan Huizinga, Hermjan Barneveld, Jari Silander, HKV Consultants, The Netherlands
- 11:50-12:10 The use of spatially distributed soil moisture data in operational flood forecasting systems**
Peter Krahe, Claudia Rachimow, Cor-Jan Vermeulen, Marjolein Mens, Federal Institute of Hydrology, Germany
- 12:10-12:30 Data issues for a southern African flood forecasting system**
Guleid Artan, United States Geological Survey, USA
- 12:30-13:30 Lunch**

(2) Uncertainty in flood forecasting

Chairman: Ezio Todini

- 13:30-13:50** **Area and distance based measures for comparing uncertain predictions of flood extent with single observations,**
N. Hunter, M.S. Horritt, P.D. Bates, S.P.B. Woodhead, School of Geographical Sciences, University of Bristol, UK
- 13:50-14:10** **Use of distributed data to reduce uncertainty in flood runoff predictions**
Sarka Blazkova and Keith Beven, Masaryk Water Research Institute, Czech Republic
- 14:10-14:30** **An European Flood Forecasting System (EFFS) study on addressing uncertainty in the prediction of heavy rainfall by limited-area numerical weather prediction model ensembles**
Kai Sattler and Henrik Feddersen, Danish Meteorological Institute, Denmark
- 14:30-14:50** **Fuzzy and hybrid approaches to modelling uncertainty in flood forecasting**
Shreedhar Maskey, UNESCO-IHE Institute for Water Education, Delft, The Netherlands
- 14:50-15:20** **Tea break**
- 15:20-15:40** **Uncertainty of hydrological forecasting due to inputting precipitation forecast and possible solution using probabilistic approach in the Czech Republic**
Jan Daňhelka, Czech Hydrometeorological Institute, Czech Republic
- 15:40-16:00** **Uncertainties in radar rainfall measurement: Can we quantify them and how can we communicate them?**
Thomas Einfalt, Einfalt and Hydrotec GbR, Germany
- 16:00-16:20** **The influence of soil moisture and evapotranspiration on runoff**
M. Kobolda and M. Brilly, Environment Agency of the Republic of Slovenia, Slovenia
- 16:20-16:40** **The effect of roughness uncertainty on flood forecasts**
Richard Body and Paul Samuels, HR Wallingford Ltd, UK
- 16:40-17:15** **Wrap up: Paul Samuels**

Poster presentations

Statistical analysis of precipitation forecast ensemble obtained by an analogue-based approach

T.Diomede, F.Nerozzi, T.Paccagnella, S.Tibaldi, E.Todini, University of Bologna, Italy

Flood forecasting using analogue-based rainfall prediction ensembles

T.Diomede, F.Nerozzi, T.Paccagnella, S.Tibaldi, E.Todini, University of Bologna, Italy

FEWS-NFFS demonstration and poster

K. Heynert, M. Werner, J. Schellekens, WL|Delft Hydraulics, The Netherlands

Uncertainty in radar measurements: Outcomes from CARPE DIEM project

P.P.Alberoni, A. Fornasiero, ARPA - Servizio IdroMeteorologico, Italy

The RISK AWARE project

P.P.Alberoni, ARPA - Servizio IdroMeteorologico, Italy

FloodMan

Inger Solheim, NORUT Information Technology, Norway

Comparison of conceptual and data-driven flood forecasting models' performance applied to the Savinja River basin

Luka Stravs, Mira Kobold, Mitja Brilly, Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia

Human impact in operational flood forecasting process in the Czech Republic

Tomáš Vlasák, Hydrometeorological Institute, Czech Republic

A preliminary investigation of radar rainfall estimation in the Ardennes region and a first hydrological application for the Ourthe catchment

A. Berne, M. ten Heggeler, R. Uijlenhoet, L. Delobbe, Ph. Dierickx and M. de Wit, WL|Delft Hydraulics The Netherlands

Similarity analysis of subsurface low response of hill slopes with complex geometry.

A. Berne, R. Uijlenhoet, and P.A. Troch, University of Wageningen, The Netherlands

Analysis of the influence of the stochastic variability of the raindrop size distribution on radar attenuation correction.

A. Berne and R. Uijlenhoet, University of Wageningen, The Netherlands

Confidence Intervals for the nonlinear prediction of river flows

Stefania Tamea, Politecnico di Torino, Italy

Estimation of flood forecasting error by means of hydrological ensembles: A case study for the River Danube

Gábor Bálint and András Csík, Environment and Water Management Institute, Hungary

Assimilation of satellite passive microwave soil moisture data into the HBV-96 model

A.H. Weerts, M. Ververs, J. Schellekens, WL|Delft Hydraulics, The Netherlands

Sequential Importance Re-sampling (SIR) and ensemble Kalman filters for nowcasting using conceptual rainfall runoff models

A.H. Weerts and P. Reggiani, WL|Delft Hydraulics, The Netherlands

Sequential data assimilation and fixed parameter estimation for nowcasting using conceptual rainfall runoff models

A.H. Weerts and S. Godsill, WL|Delft Hydraulics, The Netherlands

HarmonIT

P. Gijssbers, WL|Delft Hydraulics, The Netherlands

Sobek software demonstration

A. Verwey, WL|Delft Hydraulics, The Netherlands

FloodWorks - flood forecasting software demonstration and poster

R. Body, HR Wallingford, UK

Wednesday 24 November 2004

9:00-16:00 Steering group meeting – ACTIF project partners only

Note: The organisations in the programme refer to the affiliation of the main speaker/author