

# Welcome – Bienvenue

## 2016 HEPEX Workshop

Ensemble for better hydrological forecasts

June 6 to 8, 2016

Université Laval  
Québec, Canada



# Ensemble for better hydrological forecasts

- ▣ It is not only a call to draw attention to the numerous advantages of pooling efficient hydrological solutions to enhance operational forecasting and decision-making, it also stresses the need for **more human collaborations** all along the modelling chain: among modelers, forecasters, users and decision-makers

A lot of work can be better achieved together, sharing accomplishments and lessons learned.

# About 60 works and 100 participants

▣ From all over the world



# A broad programme

Advances in **data assimilation** schemes for operational forecasting systems

[Break-out session: “assimilate your basin”]

**Quality** of (imperfect) hydro-meteorological predictions for hydrologic applications

Practical solutions for uncertainty assessment in **operational** hydrologic forecasting systems

Enhancing **science**, applications and operations in hydrologic ensemble prediction systems

**Value** of (imperfect) hydrologic predictions in decision-making and management of water systems

Producing ensemble predictions and **communicating uncertainty** in hydrologic forecasting

**Extended-range** predictions

**Making decisions** based on uncertain forecasts and economic value

Towards a socio-hydrology framework for hydrologic forecasting and water-related **disaster management**

# Practical info for the next days

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- ▣ Coffee breaks – here
- ▣ Lunches – downstairs
- ▣ Poster session & Ice breaker – downstairs
  
- ▣ Convenience store – bus tickets
- ▣ Pub

# Thanks to the keynote speakers

## How forecasts can trigger humanitarian action

Andrew Kruczkiewicz, Red Cross Red Crescent Climate Centre



## Hydrological forecasting from a Great Lakes perspective

Andrew Gronewold  
NOAA, Great Lakes Environmental Research Laboratory



## Lessons learnt from the 2011 Lake Champlain and Richelieu River floods

Jean-François Cantin  
Environment and Climate Change Canada





# Thanks to the organizing and scientific committee members



## Organization and contact

**Organizing Committee:** François Anctil (Université Laval, Québec), Antoine Thiboult (Université Laval, Québec), Marie-Amélie Boucher (UQAC, Chicoutimi), Richard Turcotte (CEHQ, Québec), Luc Perreault (IREQ, Canada), Fabian Tito Arandia Martinez (Hydro-Québec), Nathalie Voisin (PNNL, USA), Vincent Fortin (EC, Canada), Maria-Helena Ramos (IRSTEA, France), Fredrik Wetterhall (ECMWF, UK), QJ Wang (CSIRO, Australia), Andy Wood (NCAR, USA), Yu Zhang (NOAA National Water Center)

**Scientific Committee:** Amaury Tilmant (U. Laval, Canada), Bryan Tolson (U. Waterloo, Canada), Florian Pappenberger (ECMWF, UK), John Schaake (Consultant, USA), Jutta Thielen (JRC, Italy), Paulin Coulibaly (McMaster University, Canada)

# Thanks to our funding supporters



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de l'Université Laval



*Développement durable,  
Environnement et Lutte  
contre les changements  
climatiques*

Québec 

Deltares

Enabling Delta Life



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# HEPEX

a community of research and practice to advance  
hydrologic ensemble prediction

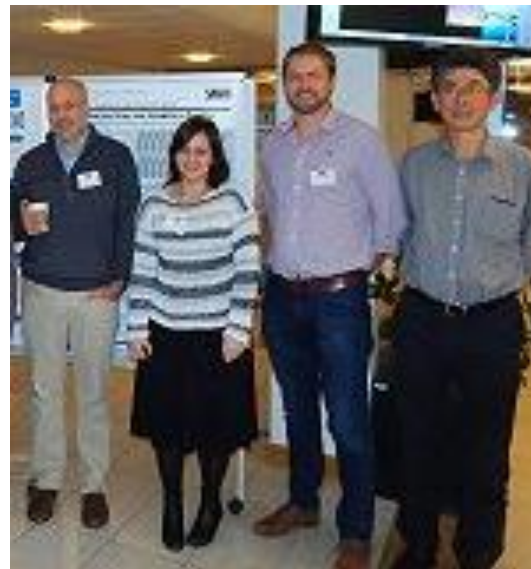
- An international community in hydrology since 2004
- ~400 members (mailing list)
- Volunteer-based (no funding)
- Specific mission: to foster the links between communities of research and practice in hydrometeorological forecasting
- Several activities, including workshops, online resources, blog posts, networking

# Organisation and chairs

- ▣ **Main topics:** Input and pre-processing, Ensemble techniques, Data assimilation, Post-processing, Verification, Communication and use in decision-making
- ▣ **4 co-chairs:**

*From left to right:*

Andy Wood  
MH Ramos  
Fredrik Wetterhall  
QJ Wang



# Blog (since 2013): [www.hepex.org](http://www.hepex.org)

- ▣ 3 website administrators
- ▣ Several editors and contributors
- ▣ Guest columnists each year (A. Persson, L. Stephens, T. Pagano, B. Schaefli, M. Zappa, M.A. Boucher, A. Holz, J. Danhelka, CSIRO Team, SMHI Team, Irstea Team, LSH Brazil Team)



From left to right:

Florian Pappenberger  
MH Ramos  
Jan Verkade



**HEPEX** a community of research and practice to advance hydrologic ensemble prediction

Home About HEPEX Join & Contact Resources Events 2016 HEPEX Workshop

— A never-ending struggle – Improving spring melt runoff forecast via snow information Workshop on Data Assimilation in Terrestrial Systems, September 19-21 in Bonn, Germany →

**The GloFAS Community Workshop – Supporting the Integration of Global Flood Forecasts Locally**

Posted on May 24, 2016 by Liz Stephens

*By Rebecca Emerton, Liz Stephens and Hannah Cloke*

On the 4<sup>th</sup> of May, delegates from across the world gathered at the University of Reading for the first

Search

Webinars on YouTube

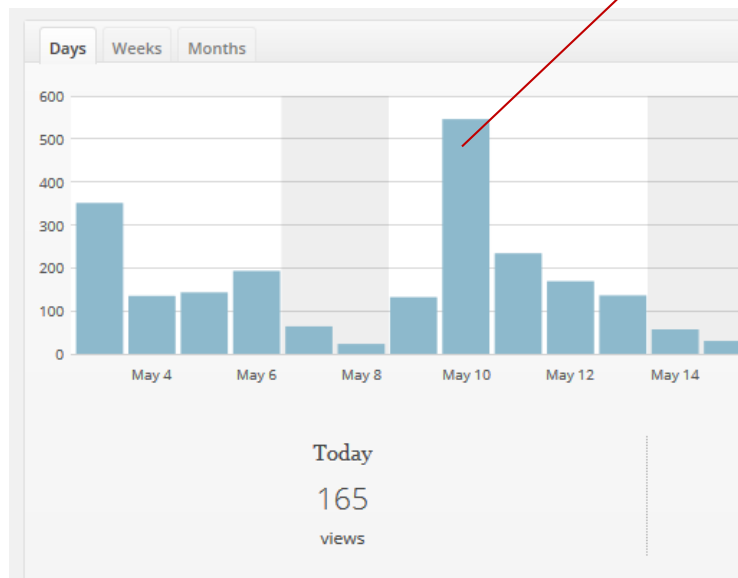
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Latest posts  
• Workshop on Data Assimilation in

# Blog (since 2013): [www.hepex.org](http://www.hepex.org)

- ▣ A total of 250 posts, more than 110,000 views
- ▣ Example of May 2016:



## Get your geek on: handling data for ensemble forecasting

Posted on [May 10, 2016](#) by [David Robertson](#)

Contributed by James Bennett, David Robertson, Andrew Schepen, Jean-Michel Perraud and Robert Bridgart, members of the [CSIRO Columnist Team](#)

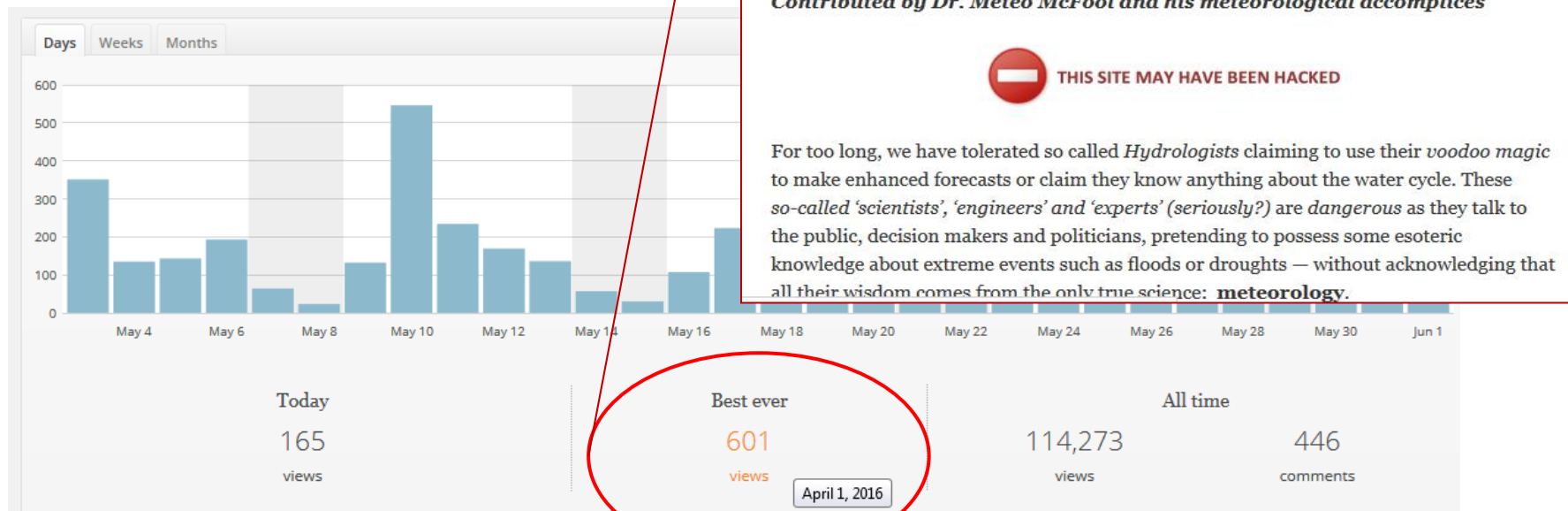
There's something about discussions of data handling that's particularly soporific – but don't nod off yet!

Most hydrologists are trained to work on individual catchments and we often opt for simple conceptual models. In the pre-ensemble era, we were often quite happy to use unsophisticated ways of crunching numbers: many of us can remember (perhaps quite recently!) using desktop computers to tune and run models, storing data in text files, and so on.

Maybe it's because it's obvious, but it's little remarked that switching from deterministic forecasts to ensembles means handling *much* more data. Here at CSIRO we tend to use 1000-member ensembles, and our partners at the Bureau of Meteorology use a method

# Blog (since 2013): [www.hepex.org](http://www.hepex.org)

## ▣ The “best ever” post

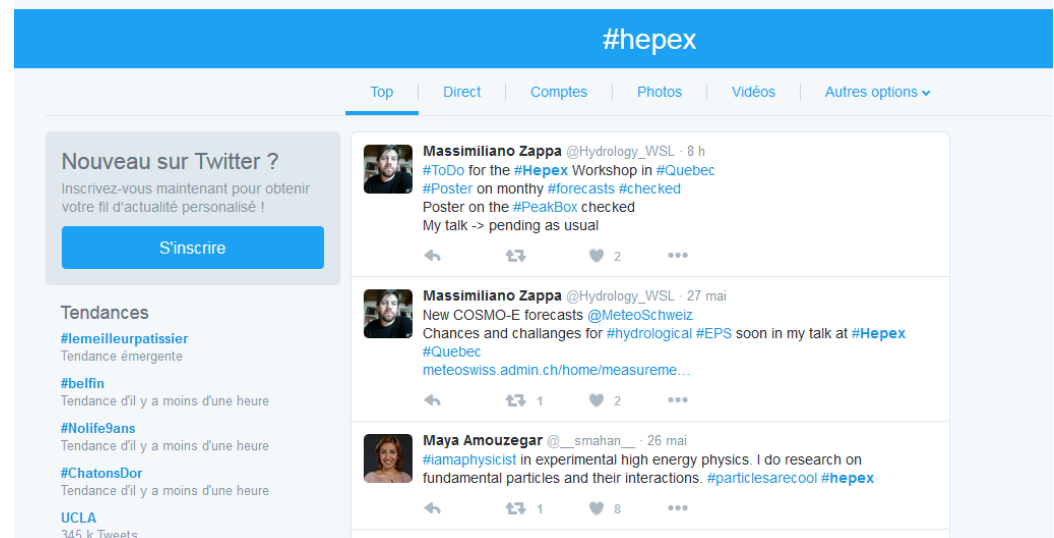




# Follow [www.hepex.org](http://www.hepex.org)

- Visit our poster
- Tweet during the workshop: it will be our (ensemble) blog post contribution for the next 3 days!

# #hepex



The screenshot shows a Twitter search page for the hashtag #hepex. The page has a blue header with the hashtag #hepex. Below the header, there are navigation tabs: Top, Direct, Comptes, Photos, Vidéos, and Autres options. The main content area displays a list of tweets. The first tweet is from Massimiliano Zappa (@Hydrology\_WSL) posted 8 hours ago, mentioning a workshop in Quebec and a poster. The second tweet is also from Massimiliano Zappa (@Hydrology\_WSL) posted 27 minutes ago, mentioning COSMO-E forecasts and a talk at the workshop. The third tweet is from Maya Amouzegar (@\_smahan\_) posted 26 minutes ago, mentioning her research on fundamental particles. On the left side, there is a section for 'Tendances' (Trends) with a list of trending hashtags: #lemeilleurpatissier, #belfin, #Nolife9ans, and #ChatonsDor, each with a description of its trend. At the bottom left, there is a mention of 'UCLA' with 345 k Tweets.

# Enjoy the workshop and enjoy Québec!

