### Session 1

#### Oral presentations
- **Ross Woods**: The search for catchment-scale physics: spatial scaling of hydrological heterogeneity
- **Luis Samaniego**: Progress towards seamless hydrologic predictions across scales: the role of land surface heterogeneity
- **Jennifer Adam**: Where should fine-resolution spatial heterogeneity be captured within Earth system models?
- **Reed Maxwell**: Spanning hillslope to the continent from hour to decade: using an integrated, hyper-resolution hydrologic model of North America to understand spatiotemporal scaling

#### Poster presentations
- **Lawrence Band**: Ecosystem processes at the watershed scale: Co-evolution of biodiversity and hydrologic behavior
- **Roger Beckie**: The geochemistry of high- and low-arsenic groundwaters and their association with an in-filled abandoned channel at a Field Site in Gotra, Nadia District, West Bengal, India
- **Trenton Franz**: Advances in multi-scale soil moisture monitoring in agricultural systems using fixed and roving cosmic-ray neutron probes
- **Witold Krajewski**: Factors affecting scaling of peak flows
- **Muhammad Masood**: Indicators of necessary storages for flood and drought management: Towards global maps
- **James McClure**: A new class of models for multiphase flow in hydrologic systems
- **Bart Nijssen**: Alternative spatial configurations to reflect landscape structure in a hydrological model: SUMMA applications to the Reynolds Creek Watershed and the Columbia River Basin
- **Enda O'Connell**: Understanding land use management impacts on the flood hydrograph: Information-tracking across scales

### Session 2

#### Oral presentations
- **Ruby Leung**: Advances in high resolution modeling and prospects for improving hydroclimate predictions
- **Ad De Roo**: Two decades of pan-European hydrologic simulations and forecasting: what's next?
- **Katrina Bennett**: Climate change and integrated forest disturbance impacts in the Colorado River basin
- **Robert Moore**: Distributed flood forecasting from countrywide to urban and field scales

#### Poster presentations
- **Amir AghaKouchak**: A hybrid statistical-dynamical drought prediction framework
- **Ana P. Barros**: Hydroclimatic variability and land-atmosphere interactions in the high-elevation tropics
- **Qingyun Duan**: Application of NMME multi-model seasonal climate predictions in Upper Yangtze River Basin
- **Siraj ul Islam**: Quantification of uncertainties in modelling the present and projected hydrology of the Fraser River Basin, British Columbia
- **Kingtse Mo**: Monitoring and Prediction of Fash Droughts over the United States
- **Christa Peters-Lidard**: Land data assimilation impacts on hydrologic and atmospheric forecasting skill: progress and prospects
- **Guiling Wang**: Application of ET bias correction in hydrological predictions
- **Xiaoli Yang**: The assessment of statistical downscaling method for CMIP5 models in China

### Session 3

#### Oral presentations
- **Kevin Trenberth**: Earth's energy imbalance and energy and water flows
- **Taikan Oki**: Global hydrology in the Anthropocene
- **Albert Van Dijk**: Multi-source satellite data assimilation to detect water cycle changes at global scale
- **Kuniyoshi Takeuchi**: Indicators of necessary storages for flood and drought management: Towards global maps

#### Poster presentations
- **Stephen Dery**: Recent trends and variability in river discharge across Northern Canada
- **Paul Houser**: Land Data Assimilation Systems
Session 4

Remote sensing retrievals and their applications in hydrology

Oral presentations

Matthew McCabe: An evolution in Earth observation for hydrology.
Doug Alsdorf: Some thoughts on the future of hydrologic measurements from remote sensing.
Remko Uijlenhoet: A hydrological signal from electromagnetic noise - toward continental-scale rainfall monitoring using microwave links from cellular communication networks.
Steven Running: Progress in representing vegetation in global evapotranspiration.

Poster presentations

Martha Anderson: Investigation of moisture patterns over agricultural landscapes using multi-sensor data fusion.
Konstantinos Andreadis: Evaluating remotely sensed observations for hydrologic forecasting.
Wade Crow: Strategies for leveraging multi-platform and multi-sensor remote sensing data sets for terrestrial water balance analysis.
Jay Famiglietti: Satellite observations of 21st century global freshwater security: Can it exist and can scientists communicate the challenges?
Hulin Gao: Towards monitoring reservoirs at high temporal resolution under all-weather conditions.
Pierre Gentine: Plant hydrodynamics and water stress strategies from remote sensing.
DK Kang: Hydrologic model calibration constrained by snow remote sensing.
Steven Running: Progress in representing vegetation in global evapotranspiration.

Session 5

Land surface model developments - LDAS systems, hyper-resolution modeling, data assimilation

Oral presentations

Marc Bierkens: High-resolution global flood risk: the global flood risk analyzer and recent developments.
Niko Verhoest: Global scale evaporation estimation: challenges, data assimilation opportunities and perspectives.
Martyn Clark: A unified approach for process-based hydrologic modeling.
Michael Ek: The North American Land Data Assimilation System (NLDAS) and Assessing Land-Atmosphere Coupling Strength.

Poster presentations

Gianpaolo Balsamo: Satellite observations for advancing global Earth surface modelling.
Nathaniel Chaney: Representing field-scale land surface spatial heterogeneity in earth system models.
Chiara Corbari: Distributed hydrological model calibration through satellite land surface temperature and discharge data.
Praveen Kumar: Extreme resolution modeling of integrated Critical Zone Processes.
Xu Liang: Multi-criteria variational data assimilation for high-resolution probabilistic hydrologic forecasting.
Kenneth Mitchell: Revisiting the surface exchange coefficient for surface sensible and latent heat flux: the overlooked middle child, but now with the magic slipper thanks to Eric Wood.
Marc Parlane: Recent development of Large Eddy Simulation for urban environments: Studies in Basel and Vancouver.
Ezio Todini: Development high resolution hydrological model for flood s and droughts.
Youloung Xia: Development and applications of the North American Land Data Assimilation System (NLDAS) - A R2O Task.
### Session 6  
**Hydrologic predictability and its relationship to land surface memory, land-atmosphere interactions, global teleconnections and climate predictability**

**Oral presentations**

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<td>The relative impacts of local connections vs distant teleconnections on a region's climate</td>
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<td>Rong Fu</td>
<td>Improving predictive understanding of drought memory and drought prediction and projection over the US Great Plains</td>
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<td>Alan Betts</td>
<td>Reinventing hydrometeorology using cloud and climate observations</td>
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<td>Paul Dirmeyer</td>
<td>The land-atmosphere coupling paradigm in the operational NWS forecast model: Consequences for hydrologic predictability</td>
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<td>Craig Ferguson</td>
<td>Long-term trends in land-atmosphere coupling and diurnal rainfall characteristics in the U.S.</td>
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<td>David Lavers</td>
<td>Predictability and earlier awareness of extreme hydrological events</td>
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<td>Lifeng Luo</td>
<td>Improving Seasonal Forecasts of Temperature, Precipitation and Soil Moisture through Statistical Processing</td>
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<td>Alberto Montanari</td>
<td>Towards a solution-oriented development of research and education in water science</td>
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<td>Valentijn Pauwels</td>
<td>Improving flood forecast skill using remote sensing data: optimizing coupled hydrologic/hydraulic systems</td>
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<td>Hubert Savenije</td>
<td>Can we predict root zone storage based on climate information alone?</td>
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<tr>
<td>Xing Yuan</td>
<td>The change and predictability of droughts across scales</td>
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### Session 7  
**Human impacts on hydrologic variability and extremes, and associated coupled human-water system feedbacks**

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<td>Water security and the science agenda</td>
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<td>Yoshihide Wada</td>
<td>Evolution of human impact modeling on global water resources</td>
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<td>Anil Mishra</td>
<td>Transfer of hydrological knowledge data and services to member states through International Hydrological Programme (IHP)</td>
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<td>Charles Vorosmarty</td>
<td>Impair-then-Repair: A global scale hypothesis on human-water interactions in the Anthropocene</td>
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<td>Laura Bowling</td>
<td>Hydrologic impacts of agricultural subsurface drainage</td>
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<td>Kaiyu Guan</td>
<td>Hydrological impacts on US crop production: historical change, climate change, and possible adaptations</td>
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<td>Megan Konar</td>
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<td>Pete Loucks</td>
<td>Attempts to find a consensus on how best to regulate the Great Lakes.</td>
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<td>Yadu Pokhrel</td>
<td>Human induced terrestrial water storage change across global river basins</td>
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<td>Henny Van Lanen</td>
<td>Large-scale drought in Europe - hazard and impacts</td>
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