

Program



September 24-26, 2012

**NCAR
3038 Center Green Drive
Boulder, Colorado**

Conference Co-Chairs:

Anthony S. Donigian, Jr.
AQUA TERRA Consultants

Richard Field
US Environmental Protection Agency /ORD (retired)
Michael Baker Jr., Inc.



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WATER RESOURCES
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Sunday, September 23, 2012

4:00 pm – 7:00 pm Optional pre-conference reception at NCAR Table Mesa Facility
(1850 Table Mesa Drive, Boulder)

Heavy hors d'oeuvres will be served.

Conference check-in materials will be available at this event.

There will be shuttle bus service from downtown Boulder.

The Mesa Lab Visitor Center is open until 5:00 with free exhibits about weather and climate, guided and self-guided tours, a gallery featuring local artists, an outdoor weather trail, etc.

Directions: <http://www2.ucar.edu/campus/mesa-laboratory>

NOTES

- Audiotaping, videotaping and photography of presentations are strictly prohibited.
- Please do not smoke at any conference functions.
- Turn your cellular telephones to vibrate or off during technical sessions.
- All conference continental breakfasts and lunches (and optional banquet), technical and poster sessions will be at NCAR Center Green (3038 Center Green Drive, Boulder).
- Be sure to check your contact information on the Participant List in this program and make any corrections to your name/contact information online. A corrected copy will be sent to all participants after the conference.
- Speakers – Please leave at least 5 minutes for questions and discussion. Be available for discussion during meals and social periods

Monday, September 24, 2012

- 07:00 – 08:30 Continental Breakfast at NCAR
Conference check-in
- 08:30 – 08:45 Conference Welcome
Conference Co-Chairs: Tony Donigian (AQUA TERRA) and Richard Field
(Michael Baker Jr., Inc; US EPA, retired)
- Session I – PAST**
Moderator: Richard Field
- 08:45 – 09:00 Introduction: Why are we here? Goals and Objectives
Leslie Shoemaker (Tetra Tech) and Wayne Huber (Oregon State University)
- 09:00 – 09:30 The evolution of watershed modeling from the Stanford model to BASINS
Tony Donigian (AQUA TERRA)
- 09:30 – 10:00 The history and evolution of the EPA SWMM
Wayne Huber (Oregon State University) and Larry Roesner (Colorado State University)
- 10:00 – 10:30 Watershed model development for assessment of agricultural land use and management
Jeff Arnold (USDA/ARS)
- 10:30 – 11:00 Coffee break / Poster viewing
- 11:00 – 11:30 USGS Watershed Model Evolution – RRM (1972) to GSFLOW (2012)
Steve Markstrom (USGS)
- 11:30 – 12:00 Watershed model development within the USACOE
Pat Deliman (ACOE/ERDC)
Bill Scharffenberg (HEC)
- 12:00 – 12:15 Discussion
- 12:15 – 13:15 Lunch / Poster viewing
- 13:15 – 15:15 Panel discussion:
History of Watershed Model Development: What Have We Learned??
What is our advice to the present/future?
Has technology opened the door to new potential?
What are the most common mistakes in modeling applications?
Moderator: Paul Freedman (Limno-Tech, Inc.)
Panelists: Norm Crawford (Hydrocomp, Inc.), Larry Roesner (Colorado State University), Bill James (Computational Hydraulics, Int'l), Bill Scharffenberg (HEC), Jeff Arnold (USD/ARS)
- 15:15- 15:45 Coffee break / Poster viewing

Monday, September 24, 2012 (continued)

Session II - PRESENT

Moderator: Leslie Shoemaker

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|---------------|---|
| 15:45 – 16:15 | Chesapeake Bay watershed model evolution over 30 years
Lewis Linker (US EPA/CBP Modeling Director), Gary Shenk (US EPA) |
| 16:15 – 16:45 | Lake Tahoe Modeling – Comprehensive system analysis and management
John Reuter (University of California Davis) / John Riverson (Tetra Tech) |
| 16:45 – 17:15 | Regional SWAT application in the Texas Gulf for Conservation Policy
Assessment
Jeff Arnold (USDA/ARS) |
| 17:15 – 18:00 | Poster viewing |
| 18:00 | Buses return to hotels |

Tuesday, September 25, 2012

- 07:00 – 08:30 Continental Breakfast at NCAR
- 08:15 – 08:20 Welcome and Themes for the day
Leslie Shoemaker (Tetra Tech)
- 08:20 – 08:50 SWMM 5 – A Case Study of Model Redevelopment
Lew Rossman (US EPA/ORD)
- 08:50 – 09:20 WinSLAMM: Integrating Stormwater Management and Green Technologies
Robert Pitt (University of Alabama)
- 09:20 – 09:50 SUSTAIN: Urban Modeling Systems Integrating Optimization and Economics
Joong Lee (US EPA/ORD) and John Riverson (Tetra Tech)
- 09:50 – 10:20 National Data – Linking Models and Data in Regional Applications
Jack Kittle and Paul Hummel (both AQUA TERRA)
- 10:20 – 10:50 Coffee break
- Applying Models to Today's Needs**
- 10:50 – 11:20 SSOAP Toolbox – Evolution and Applications
Srini Vallabhaneni (CDM Smith)
- 11:20 – 11:50 Modeling urban watersheds impacted by CSOs and SSOs
Ted Burgess (CDM Smith)
- 11:50 – 12:50 Lunch and Poster Viewing
- 12:50 – 13:20 Watershed modeling for impact assessment on U.S. Military Installations
John Imhoff (AQUA TERRA)
- 13:20 – 13:50 Improving watershed models through stakeholder involvement
Laura Weintraub (Limno-Tech, Inc.)
- 13:50 – 14:20 Modeling and the assessment of waters: Impacts of nutrient loading
Tim Wool (US EPA/ORD)
- 14:20 – 14:50 Use of HSPF and SWAT Watershed Models for Climate Response Simulation
Jonathan Butcher (Tetra Tech)
- 14:50 – 15:15 Coffee break

Tuesday, September 25, 2012 (continued)

Session III: Future

Moderator: Richard Hooper

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|---------------|--|
| 15:15 – 15:30 | Introduction to Session III
Rick Hooper (CUAHSI) |
| 15:30 – 16:15 | Models for Scientific Inquiry

The dialog between field scientist and watershed modeler
Jeff McDonnell (University of Saskatchewan - currently Oregon State University) |
| 16:15 – 16:45 | The right answer for the right reason
Jerad Bales (USGS/Chief Scientist of Hydro) |
| 16:45 – 17:15 | Challenges for conducting regulatory water quality modeling: Keeping up in a rapidly shifting scientific and political environment
Michael Haire (US EPA/OWOW) |
| 17:15 – 18:00 | Poster viewing/Reception/Appetizers |
| 18:30 | Banquet (Optional)
Keynote Speaker: Dr. Norman H Crawford, Hydrocomp, Inc.
Title: "Watershed Modeling History, Philosophy and Prognostication" |
| 20:00 | Buses return to hotels |

Wednesday, September 26, 2012

- 07:00 – 08:15 Continental Breakfast at NCAR
- 08:15 – 08:45 Community and New Models
- HydroShare: An online, collaborative environment for the sharing of hydrologic data and models
Dave Tarboton (Utah State University)
- 08:45 – 09:15 Coupling hydrologic models with weather and climate models for seamless predictions
David J. Gochis (National Center for Atmospheric Research)
- 09:15 – 09:45 Towards a national water modeling system
Don Cline (Chief, Hydrology Laboratory, National Weather Service, NOAA)
- 09:45 – 10:15 Coffee break
- 10:15 – 10:45 Petascale hydrologic modeling: Needs and challenges
Fred Ogden (University of Wyoming)
- 10:45 – 11:15 Enabling distributed hydrologic prediction through radar detection of rainfall
Baxter Vieux (University of Oklahoma)
- 11:15 – 11:45 SWMM5/PCSWMM combined 1D-2D modeling: Applications to urban flooding
Rob James and Bill James (CHI)
- 11:45 – 12:15 Beyond the desktop: Embedded modeling and cloud-based real-time monitoring and control
Marcus Quigley (Geosyntec)
- 12:15 – 13:15 Lunch and Poster Viewing
- 13:15 – 13:45 New developments for parameterizing models for forecasting and uncertainty
Christine Shoemaker (Cornell University)
- 13:45 – 14:15 Non-traditional databases to support contemporary urban water modeling
James Heaney (University of Florida)
- 14:15 – 14:45 Modeling the integrated urban water system
Larry Roesner (Colorado State University)
- 14:45 – 15:15 Critical gaps in operational watershed modeling
Ken Potter (University of Wisconsin)
- 15:15 – 15:45 Coffee break
- 15:45 – 16:45 Open Discussion with all attendees
Moderator: Wayne Huber
(3-4 minutes per question)
- 16:45 – 17:00 Closing Remarks
Tony Donigian (AQUA TERRA) and Richard Field (Michael Baker; Jr. ,Inc., US EPA, retired)

List of Poster Presentations

- 1 – **A distributed monthly hydrologic model for integrating spatial variations of basin topography and rainfall**
Yongqin David Chen
The Chinese University of Hong Kong, Hong Kong
- 2 - **Simulating hydrologic impacts of climate changes in the Dongjiang Basin, South China: Comparison of six monthly models**
Yongqin David Chen
The Chinese University of Hong Kong, Hong Kong
- 3 - **Automation of HSPF simulations for parameter optimization, uncertainty, and sensitivity analysis**
Jason Love; Seth Kenner
RESPEC, South Dakota, USA
- 4 - **Modeling as a management component for developing optimized surface water distribution and distributed real-time monitoring and control**
Scott Struck; Marcus Quigley
Geosyntec Consultants, USA
- 5 –**Regional Water Planning in Georgia**
Brian Watson
Tetra Tech, USA
- 6 - **Using a watershed model to inform decision making in southern Wisconsin, USA**
Douglas Brugger, Kenneth W. Potter
University of Wisconsin-Madison, USA
- 7 - **The development of sizing and performance production functions of green infrastructure stormwater controls using WinSLAMM**
Robert E. Pitt and Leila Talebi
University of Alabama, USA
- 8 - **Software support for watershed modeling – the Basins experience**
Paul B. Duda
AQUA TERRA Consultants
- 9 - **Real time high-resolution flood forecasting system using PCSWMM, EPA SWMM5 and NEXRAD radar**
Karen Finney, Rob James
CHI, USA
- 10 - **A distributed watershed hydrology, sediment and nutrient transport and fate modeling system**
Zhonglong Zhang, Billy E. Johnson, Chuck W. Downer
U.S. Army Engineer Research and Development Center, USA
- 11 - **A new surface delineation approach for characterizing threshold-driven watershed processes—introduction to the puddle-to-puddle (P2P) modeling system**
Xuefeng Chu, Jun Yang
North Dakota State University, USA

- 12 - **Continuous simulation using SWMM 5 LID and groundwater features in a linked 1D/2D network using InfoSWMM 2D for a 50 year period**
Robert Dickinson, Chun-Hou Orr, Feng Shang
Innovyze Inc., USA
- 13 - **Using research results to constrain the simulation of sediment processes within hydrologic simulation program FORTRAN models**
Charles P. Regan, MN Pollution Control Agency. USA
Jonathan Butcher, Tetra Tech, USA
- 14 - **The statewide application of hydrologic simulation program FORTRAN (HSPF) models to support the business needs of the Minnesota Pollution Control Agency**
Charles P. Regan, Timothy J. Larson
MN Pollution Control Agency
- 15 - **Modeling LID in SWMM: How to optimize the use of distributed controls to meet flow duration objectives for reducing CSOs and urban streambank erosion**
William Lucas
Integrated Land Management, Inc. Malvern, PA, USA
- 16 – **Use of integrated surface water/groundwater models for water resources management**
Alaa Aly
Intera Incorporated, USA
- 17 – **Stormwater management for TMDLs in an arid climate: A case study application of sustain in Albuquerque, New Mexico**
John Riverson and Leslie Shoemaker
Tetra Tech, Inc.
Arimalar Selvakumar and Nelly Smith
US EPA, USA
- 18 - **Calibrating WinSLAMM: An urban stormwater quality model using data from the National Stormwater Quality Database**
John Voorhees, PV and Associates, USA
Robert Pitt, The University of Alabama
- 19 **Urban flood risk assessment by RCP scenario and non-stationary frequency analysis**
NaRae Kang, Inha University, Korea; ByungSik Kim, Kangwon National University, Korea;
Yonsoo Kim, Inha University, Korea; Hungsoo Kim, Inha University, Korea
- 20 **Assessment of the vulnerability of flood in Han-River Basin, Korea under climate change**
SooJun Kim, Columbia University, USA; Hungsoo Kim, Inha University, Korea; Jongso Lee, Inha University, Korea; HuiSeong Noh, Inha University, Korea
- 21 **Flood forecasting in real time**
Ricardo Mantilla, University of Iowa, USA
22. **Integrated Modeling for stormwater management and source water protection**
Fernano Pasquel and Henry Manguerra, Baker, USA