

Hydrology Days 2006
 Conference Program
AGU Hydrology Days 2006
 March 20 - March 22, 2006

Hydrology Days 2006			
Program at a Glance			
	March 20	March 21	March 22
8 am - 6 pm	Posters	Posters	Posters
8 - 9:45 am	River Restoration - Hydraulics	All Posters Session	Climate - Hydrology
9:45 - 10 am	Coffee break	Coffee break	Coffee break
10 - 12 am	Biocomplexity	Remediation - Industrial Releases	Hurricanes - Climate - Science Policy
12 - 1:30 pm	Lunch Borland Lecturer in Hydrology	Lunch Hydrology Days Award Presentation	Lunch Borland Lecturer in Hydraulics
1:30 - 3:45 pm	Sediment - Erosion - Geomorphology I	Hydrology Days Award Session I	Agro-ecosystems of the Lower Arkansas
1:30 - 3:45 pm	Stochastic Approaches - Time Series Analysis	Emerging Contaminants: Emerging Technologies	Snow Hydrology I
3:45 - 4 pm	Coffee break	Coffee break	Coffee break
4 - 6 pm	Sediment - Erosion - Geomorphology II	Hydrology Days Award Session II	Hydrologic Modeling - Simulation
4 - 6 pm	Stochastic Approaches - Time Series Analysis	Urban Hydrology	Snow Hydrology II
7:30 pm			CSU Wind Ensemble Water Concert

March 20		
March 20	8:00	River Restoration - Hydraulics
		Chair: Brian Bledsoe Department of Civil Engineering, CSU
		Cherokee Park Room - Lory Student Center
	8:15	A river evolution comparison of adjacent stable and unstable urban watersheds in San Jose, California
		Brett A. Jordan Department of Civil Engineering, Colorado State University William K. Annable Department of Civil Engineering, University of Waterloo, Waterloo, Ontario Chester C. Watson Department of Civil Engineering, Colorado State University
	8:30	Aerial photographic analysis of riparian vegetation growth and channel change at Canyon de Chelly National Monument, Arizona, 1935-2004
		Daniel Cadol Department of Geosciences, Colorado State University, cadol@cnr.colostate.edu Sara Rathburn Department of Geosciences, Colorado State University, rathburn@cnr.colostate.edu
	8:45	A cost-based risk assessment method for selecting stream restoration design alternatives
		Sue L. Niezgodá Department of Civil and Architectural Engineering, University of Wyoming
	9:00	Predicting flow resistance in mountain streams
		Brian P. Bledsoe and Benjamin S. Snyder Department of Civil Engineering, Colorado State University
	9:15	Effects of diversion dams on physical characteristics of streams
		Daniel W. Baker and Brian P Bledsoe Civil Engineering Department, Colorado State University, Fort Collins
	9:30	Predicting Hydrologic Extremes for Biological Assessment at Ungauged Basins in the Western United States
		Kiran Chinnayakanahalli and David G. Tarboton Civil and Environmental Engineering Department, Utah State University Charles P. Hawkins Department of Aquatic, Watershed, and Earth Resources, Utah State University, Logan, UT
	9:45	Mid-morning break
March 20	10:00	Bio-Complexity
		Chair: John Loomis Department of Agricultural and Resource Economics, CSU
		Cherokee Park Room - Lory Student Center
	10:00	Physical Road and Stream Network Connectivity North Eastern Puerto Rico
		Kirk Sherrill, Melinda Laituri Department of Forest, Rangeland and Watershed Stewardship, Colorado State University Andrew Pike, Fred Scatena, Department of Earth and Environmental Sciences, University of Pennsylvania Katie Hein Department of Aquatic, Watershed and Earth Resources, Utah State University
	10:15	Individual Recreation Use as a Function of Stream Features: Testing the Influence of Commonly Reported Stream Variables versus Field Level Stream Variables
		Juan Marcos Gonzalez and John B. Loomis Colorado State University, Dept. Ag. & Resource Economics

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	10:30	Physical and chemical factors affecting the upstream migration of amphidromous shrimp in the Luquillo Experimental Forest, Puerto Rico
		D.A. Kikkert, T.A. Crowl, and A.P. Covich Ecology Center, Utah State University
	10:45	Geomorphic and anthropogenic influences on tropical stream communities
		T.A. Crowl, C.L. Hein, A. Pike, J.F. Blanco, K. Sherrill, A.C. Covich, and F.N. Scatena
	11:00	Effects of drought on low flows and freshwater shrimp (<i>Macrobrachium</i>) distributions in a tropical montane drainage network, Luquillo Experimental Forest, Puerto Rico
		A. P. Covich and T. A. Crowl Institute of Ecology, University of Georgia, Athens, GA
	11:15	Topography's Influences on Hydrological Response Units - Without Process Modelling
		S.R. Fassnacht and M.J. Laituri Watershed Sciences Program, Colorado State University
	11:30	A generalized multiobjective particle swarm optimization solver for spreadsheet models: application to water quality
		Alexandre Baltar and Darrell G. Fontane Dept. of Civil and Environmental Engineering, Colorado State University
	11:45	Multiobjective procedure for calibration of hydrologic models using SWARM paradigm
		M. Kashif Gill, Yasir H. Kaheil, Abedalrazq Khalil, Mac Mckee, and Luis Bastidas Department of Civil and Environmental Engineering, Utah State University
March 20	12:00	Lunch break - North Ball Room - Lory Student Center
		Borland Lecturer in Hydrology
		Professor Upmanu Lall Columbia University
March 20	2:00	Stochastic Approaches I
		Chair: Jose D Salas Department of Civil Engineering, CSU
		Cherokee Park Room - Lory Student Center
	2:00	Hydromorphology: Hydrology in an Evolving World
		Upmanu Lall
		Alan and Carol Silberstein Professor of Earth and Environmental Engineering and of Civil Engineering and Engineering Mechanics
		Columbia University
	2:30	Multivariate Shifting Mean Plus Persistence Model for Simulating the Great Lakes Net Basin Supplies
		Óli Grétar Blöndal Sveinsson The National Power Company (Landsvirkjun), Reykjavík Iceland
		Jose D. Salas Civil Engineering Department, Colorado State University, Fort Collins
	2:45	A River Flood Warning System Using a Neural Probabilistic Forecasting Model
		Hyun-Suk Shin Department of Civil Engineering, Pusan National University, Pusan, S. Korea
		Jose D. Salas Department of Civil Engineering, Colorado State University
	3:00	An Extreme Precipitation Return Level Map for Colorado's Front Range
		Daniel Cooley, Doug Nychka, and Philippe Naveau Department of Statistics, Colorado State University
	3:15	Semiparametric Multivariate and Multi-site Weather Generator
		Somkiat Apipattanavis, Guillermo P. Podesta, Balaji Rajagopalan Department of Civil Engineering, University of Colorado, Boulder, Colorado

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	3:30	Interannual Variability and Ensemble Prediction of Upper Blue Nile Basin Kiremt Season Precipitation
		Paul Block and Balaji Rajagopalan Department of Civil Environmental and Architectural Engineering, University of Colorado Boulder, Colorado
	3:45	Mid-afternoon break
March 20	4:00	Stochastic Approaches II
		Chair: Jose D Salas Department of Civil Engineering, CSU
		Cherokee Park Room - Lory Student Center
	4:00	Forecasting Spring Reservoir Inflows in Churchill Falls Basin in Québec Canada
		Óli Grétar Blöndal Sveinsson The National Power Company (Landsvirkjun), Reykjavík Iceland Upmanu Lall International Research Institute for Climate Prediction of Columbia Univ., Palisades, NY, USA
	4:15	Simulating influent water quality parameters using a nearest-neighbor technique
		Erin Towler, Balaji Rajagopalan and Scott Summers Department of Civil, Environmental and Architectural Engineering, University of Colorado, Boulder, Colorado
	4:30	Estimating the Return Period of Extreme Hydrologic Droughts
		Z. S. Tarawneh and J. D. Salas Civil Engineering Department, Colorado State University, Fort Collins
	4:45	Simple-Scaling of Flood Quantiles in a Small Hortonian Research Watershed: Higher-Order Moments and the Effect of Record Length
		Fred L. Ogden Dept. of Civil & Architectural Engineering, University of Wyoming, Laramie , WY Anthony G. Benoit Environmental Engineering Program, University of Connecticut, Storrs, CT
	5:00	Disaggregating Daily Rainfall into Hourly Quantities
		T.S. Lee and J. D. Salas Civil Engineering Department, Colorado State University, Fort Collins
March 20	2:00	Sediment - Erosion - Geomorphology - Fires I
		Chair: Lee MacDonald Forest, Range, and Watershed Stewardship Department, CSU
		North Ball Room - Lory Student Center
	2:00	Predicting variability in post-fire sediment yields: Efforts to validate ERMIT in the Colorado Front Range
		Isaac J. Larsen, Lee H. MacDonald Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University Peter R. Robichaud, William J. Elliot U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Moscow, Idaho
	2:15	Post-fire Channel Change in Small Mountainous Catchments
		Duncan Eccleston and Lee MacDonald Department of Forest, Rangeland and Watershed Stewardship, Colorado State University
	2:30	Modeling Post-fire Erosion in the Western US
		Mary Ellen Miller Civil, Structural and Environmental Engineering, University at Buffalo Lee MacDonald Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University
	2:45	Variability in Total Sediment Load Using BORAMEP on The Rio Grande Low Flow Conveyance Channel
		Seema Shah Department of Civil Engineering, Colorado State University

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	3:00	A GIS Tool to Analyze Forest Road Sediment Production and Stream Impacts
		Ajay Prasad, David G. Tarboton Civil and Environmental Engineering Department, Utah State University Charles H. Luce Research Hydrologist, USDA Forest Service, Boise, ID - 83702 Thomas A. Black Hydrologist, USDA Forest Service, Boise, ID - 83702
	3:15	Applications of GSTARS Computer Models
		Chih Ted Yang Colorado State University Francisco J. M. Simões U.S. Geological Survey
	3:45	Mid-afternoon break
March 20	4:00	Sediment - Erosion - Geomorphology - Fires II
		Chair: Lee MacDonald Forest, Range, and Watershed Stewardship Department, CSU
		North Ball Room - Lory Student Center
	4:00	Which Discharge Rate Controls the Long-Term Geomorphic Evolution of a Watershed?
		Xiangjiang Huang Department of Civil and Environmental Engineering, Pennsylvania State University Jeffrey D. Niemann Department of Civil Engineering, Colorado State University
	4:15	Measuring and Predicting Road Sediment Production in the Southern Sierra Nevada, California
		Abby Korte and Lee H. MacDonald Watershed Science Program, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University
	4:30	Sedimentation Problems at the Nakdong River Estuary Barrage and Retrofitting Design for the Gupo bridge piers on the Lower Nakdong River
		Un Ji- and Pierre Julien Civil Engineering Department, Colorado State University
	4:45	Sediment Production from Unpaved Roads, OHV Trails, and Forest Thinning Operations in the Colorado Front Range
		Matthew Welsh and Lee MacDonald Watershed Science Program, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University
	5:00	FOREST: A spatially explicit sediment model for forested watersheds
		S. E. Litschert Department of Geosciences, Colorado State University L. H. MacDonald Department of Forest, Rangeland and Watershed Stewardship, Colorado State University

March 21

March 21	8:00	Poster Session
		<p>Chair: Jorge A Ramirez Department of Civil Engineering, CSU</p> <p>North Ball Room - Lory Student Center</p>
	8:00 - 9:45	Posters
	9:45	Mid-morning break
March 21	10:00	Remediation - Industrial Releases
		<p>Chair: Tom Sale Department of Civil Engineering, CSU</p> <p>Cherokee Park Room - Lory Student Center</p>
	10:00	<p>Soil Remediation Case Study: ZVI-Clay for Treatment of Tetrachloroethylene Source Zone Mitchell Olson and Tom Sale Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523-1320</p>
	10:15	<p>Installation of an Electrolytic Reactive Barrier for Treatment of Energetic Compounds in Groundwater Dave Gilbert, Matthew Petersen, Tom Sale Department of Civil Engineering, Colorado State University</p>
	10:30	<p>From Laboratory To The Field: Intermediate Scale Testing, A Necessary Step Tissa H. Illangasekare Center for Experimental Study of Subsurface Environmental Processes, Colorado School of Mines</p>
	10:45	<p>Advancing an Innovative Remediation Technology to Broad Commercial Use Tom Sale and Gary Amato Department of Civil and Environmental Engineering, Colorado State University</p>
	11:00	<p>Physical characterization of soils mixed with slurries of clay and zero-valent-iron David Castelbaum and Charles D. Shackelford Department of Civil Engineering, Colorado State University</p>
	11:15	<p>Modeling Contaminant Mass Transport and Degradation in a Gas-Evolving Electrolytic Permeable Reactive Barrier Matt Petersen and Ken Reardon Department of Chemical and Biological Engineering, Colorado State University Tom Sale Department of Civil Engineering, Colorado State University</p>
	11:30	<p>Benefits of Upgradient Contaminant Flux Reduction Lee Ann Rutherford, Tom Sale, and David Dandy Department of Civil Engineering, Colorado State University</p>
	11:45	<p>An Evaluation of Three Methods for Estimating Free-product LNAPL Flow Rates through Contaminated Porous Media Gabriel Iltis and Tom Sale Department of Civil Engineering, Colorado State University</p>
March 21	12:00	Lunch break
		<p>Presentation of Hydrology Days Award</p> <p>Professor Rafael L Bras Massachusetts Institute of Technology</p>

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March 21	2:00	Hydrology Days Award Session I
		<p>Chair: Jorge A Ramirez Department of Civil Engineering, CSU</p> <p>Cherokee Park Room - Lory Student Center</p>
	2:00	<u>Frontiers in Hydrologic Science: Complexity and Organization in Hydrology</u>
		Rafael L. Bras Edward A. Abdun-Nur Professor of Civil and Environmental Engineering and of Earth, Atmospheric and Planetary Sciences Massachusetts Institute of Technology
	2:30	<u>In Search of Organization and Complexity in Semiarid Mountain Regions with Monsoonal Climates</u>
		Enrique R. Vivoni Department of Earth and Environmental Science, New Mexico Institute of Mining and Technology, Socorro, NM.
	2:45	<u>Ecohydrology of a seasonal cloud forest in Dhofar</u>
		Elfatih A B Eltahir Ralph M Parsons Laboratory, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology
	3:00	<u>Probabilistic treatment of sub-reach-scale bed stress in long-term channel evolution models</u>
		Gregory E. Tucker Cooperative Institute for Research in Environmental Sciences (CIRES) and Department of Geological Sciences, University of Colorado, Boulder
	3:15	<u>Water Balance Controls on Vegetation Productivity Across the Climatic Gradients of the Central United States</u>
		John P. Kochendorfer The Environmental Institute, University of Massachusetts, Amherst, MA Jorge A. Ramirez Department of Civil and Environmental Engineering, Colorado State University
	3:30	<u>Catchment-Scale Variability of Soil Moisture: Controlling Factors and a Method for Estimation</u>
		Mark A. Perry and Jeffrey D. Niemann Department of Civil Engineering, Colorado State University
	3:45	Mid-afternoon break
March 21	4:00	Hydrology Days Award Session II
		<p>Chair: Jorge A Ramirez Department of Civil Engineering, CSU</p> <p>Cherokee Park Room - Lory Student Center</p>
	4:00	<u>Developing a Community Hydrologic Information System</u>
		David G Tarboton Utah Water Research Laboratory, Civil and Environmental Engineering Department, Utah State University David R. Maidment Center for Research in Water Resources, University of Texas at Austin Ilya Zaslavsky San Diego Supercomputer Center, University of California at San Diego
	4:15	<u>Water Management Requirements for a New Energy Policy</u>
		Neil S. Grigg Civil Engineering Department, Colorado State University, Fort Collins

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	4:30	Can Absence of Multiple Teleconnection Patterns Lead to Trends in Hydrologic Signals?
		David Small Cincinnati Earth System Science Program, Department of Civil and Environmental Engineering, University of Cincinnati Shafiqul Islam and Richard Vogel Department of Civil and Environmental Engineering, Tufts University
	4:45	Downscaling remotely sensed soil moisture observations to hillslope scales with physically based distributed models through data assimilation
		Alejandro N. Flores, Rafael L. Bras, and Dara Entekhabi Ralph M. Parsons Laboratory, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology
	5:00	Seasonal and regional variability in scaling properties and correlation structure of high resolution precipitation data in a highly heterogeneous mountain environment (Switzerland)
		Peter Molnar and Paolo Burlando Institute of Environmental Engineering, ETH Zurich, Switzerland
	5:15	Reconstructing mechanistic models of alpine basins hydro-climatic behaviour using observed data
		Paolo Perona, Darcy Molnar and Paolo Burlando Institute of Environmental Engineering, ETH Zurich, Switzerland
	5:30	Classification of Channel Network Planforms Based on Deviations from Self-Similarity
		Alfonso I. Mejia and Jeffrey D. Niemann Department of Civil Engineering, Colorado State University
March 21	2:00	Emerging Contaminants: Emerging Technologies
		Chair: Amy Pruden Department of Civil Engineering, CSU
		North Ball Room - Lory Student Center
	2:00	Dense Medium Plasma: A Promising New Water Treatment Approach
		Ashish Sharma, George J. Collins, Cameron Moore Department of Electrical and Computer Engineering, Colorado State University, Fort Collins Amy Pruden Department of Civil and Environmental Engineering, Colorado State University, Fort Collins
	2:15	Antibiotic Resistance Genes (ARG) in the Environment: Effect of Composting
		H.N. Storteboom, S.C. Kim, K.H. Carlson and A. Pruden Civil Engineering Department, Colorado State University, Fort Collins
	2:30	Microbiological Comparison of Two Field-Scale Sulfate-Reducing Permeable Reactive Zones Treating Mine Drainage
		Sage R. Hiibel Chemical and Biological Engineering Department, Colorado State University, Fort Collins Luciana P. Pereyra Civil and Environmental Engineering Department, Colorado State University, Fort Collins Amy Pruden Civil and Environmental Engineering Department, Colorado State University, Fort Collins Kenneth F. Reardon Chemical and Biological Engineering Department, Colorado State University, Fort Collins
	2:45	Using Molecular Tools to Monitor a Microbial Consortium Degrading a 12-Chemical Mixture
		Rachel E. Hanson Civil Engineering Department, Colorado State University, Fort Collins C. Sans Chemical Engineering and Metallurgy Department, Universitat de Barcelona, Barcelona M. Hoelscher Chemical and Biological Engineering Department, Colorado State University, Fort Collins A. Pruden Civil Engineering Department, Colorado State University, Fort Collins K.F. Reardon Chemical and Biological Engineering Department, Colorado State University, Fort Collins
	3:00	Treatment of MTBE and BTEX at a Local Refinery: Bench and Field Studies
		Maria Raynal, Amy Pruden, Tom Sale Department of Civil and Environmental Engineering, Colorado State University

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	3:15	Antibiotic Resistance Genes (ARG) Studies in the Poudre River and Northern Colorado
		Ruoting Pei, Amy Pruden, Sung-Chul Kim, and Kenneth H. Carlson Department of Civil Engineering, Colorado State University
	3:30	Modeling of Anaerobic Digestion for Agricultural Waste
		Durmus Cesur San Antonio River Authority, 100 East Guenther, San Antonio, TX 78229 Maurice L. Albertson Civil Engineering Department, Colorado State University, Fort Collins, CO 80523
	3:45	Mid-afternoon break
March 21	4:00	Urban Hydrology
		Chair: Larry Roesner Department of Civil Engineering, CSU
		North Ball Room - Lory Student Center
	4:00	Protocols for the Evaluating the Effects of Land-use Patterns and Runoff Management on Urban Streams
		Larry A. Roesner and Christine A. Rohrer Department of Civil Engineering, Colorado State University
	4:15	Multipurpose Detention Pond Design for Improved Watershed Management in New Korean Developments
		Daeryong Park Department of Civil Engineering, Colorado State University Sukhwan Jang Department of Civil Engineering, Daejin University, Pochun-city, Kyungki-do, 487-711, KOREA Larry A. Roesner Department of Civil Engineering, Colorado State University
	4:30	Quantifying Urban-induced Flow Regime Alteration and Evaluating Mitigation Alternatives Using Mathematical Models and Hydrologic Metrics
		J. L. Edgerly, L. A. Roesner, C. A. Rohrer, and J. A. Gironás Harold H. Short Urban Water Infrastructure Laboratory, Department of Civil Engineering, Colorado State University
	4:45	Effects of Four Catchment Modifications on Urban Runoff
		J.P. Davis, C.A. Rohrer, and L.A. Roesner Urban Infrastructure Laboratory, Department of Civil Engineering, Colorado State University
	5:00	Experimental Analysis And Different Modeling Approaches For A Stormwater Perlite Filter
		José M. Adriasola, Jorge A. Gironás and Bonifacio Fernández Departamento de Ingeniería Hidráulica y Ambiental, Pontificia Universidad Católica de Chile
	5:15	Watershed Discretization in Urban Watersheds for Rainfall-Runoff Modeling
		Ivan Rivas and Larry A. Roesner Department of Civil Engineering, Colorado State University
	5:30	Guidance for Improving Monitoring Methods for Stormwater-Borne Solids
		E.M. Kidner, L.A. Roesner, A. Pruden Department of Civil Engineering, Colorado State University

March 22		
March 22	8:00	<p>Climate and Hydrology</p> <p>Chair: Jorge A Ramirez Department of Civil Engineering, CSU</p> <p>Cherokee Park Room - Lory Student Center</p>
	8:15	<p>Variations in Precipitation and Temperature Signals and Characteristic Responses in Autumn and Spring Seasonal Hydrographs: Implications to Water Resource Management in the Gunnison River Basin</p> <p>Matter, Margaret A., Luis A. Garcia, and Darrell Fontane Department of Civil Engineering, Colorado State University</p>
	8:30	<p>Shifts in Seasonal Columbia River Runoff Associated with Large-Scale Climatic Oscillations</p> <p>Steven B. Barton Bonneville Power Administration, Portland, Oregon Jorge A. Ramirez Engineering Department, Colorado State University, Fort Collins, Colorado</p>
	8:45	<p>The Influence of El Niño Phenomena on the Climate of Venezuela</p> <p>Edilberto Guevara Civil and Environmental Engineering, Carabobo University, Bárbula, Valencia, Venezuela</p>
	9:00	<p>Oceanic-Atmospheric Variability and Western Snowfall</p> <p>Thad Hunter Department of Civil and Architectural, University of Wyoming, Laramie, WY Glenn Tootle Department of Civil and Architectural, University of Wyoming, Laramie, WY</p>
	9:15	<p>Seasonal Shifts in the North American Monsoon</p> <p>Katrina Grantz Balaji Rajagopalan, Martyn Clark, and Edith Zagona Dept of Civil, Environmental & Architectural Engineering (CEAE), University of Colorado, Boulder, CO</p>
	9:30	<p>Surface temperature patterns and lapse rates: implications for water resources and studies of mountain climate change</p> <p>Jessica Lundquist CIRES-NOAA ESRL PSD, University of Colorado, Boulder</p>
	9:45	Mid-morning break
March 22	10:00	<p>Hurricanes - Climate - Science Policy</p> <p>Chair: Jorge A Ramirez Department of Civil Engineering, CSU</p> <p>Cherokee Park Room - Lory Student Center</p>
	10:00	<p>Hurricanes and Global Warming</p> <p>William Gray Department of Atmospheric Science, Colorado State University</p>
	10:20	<p>Hurricanes and Global Warming: Policy and Politics</p> <p>Roger Pielke, Jr. CIRES, University of Colorado, Boulder</p>
	10:40	<p>Climate system complexity and vulnerability approach: A broader perspective on climate change</p> <p>Roger Pielke, Sr. Department of Atmospheric Science, Colorado State University</p>

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	11:00	Wind, wave and surge-induced damage to woodframe structures during hurricane Katrina
		John van de Lindt Department of Civil Engineering, Colorado State University
	11:20	2005 Colorado Water Year
		Nolan Doesken Department of Atmospheric Science, Colorado State University
	11:40	Artists' Depictions of Catsteps in the Loess Hills of Iowa: Evidence for Mid-Nineteenth Century Climate Change
		Kimberly R. Dillon, Steven H. Emerman, and Pamela K. Wilcox Department of Biology and Environmental Science Simpson College, Indianola, Iowa 50125
March 22	12:00	Lunch break
		Borland Lecturer in Hydraulics
		Professor Dr. Willi Hager ETH-Zurich
March 22	2:00	Agro-ecosystems of the Lower Arkansas River
		Chair: Luis Garcia Department of Civil Engineering, CSU
		Cherokee Park Room - Lory Student Center
	2:00	Assessing and Modeling Irrigation-Induced Selenium in the Stream-Aquifer System of the Lower Arkansas River Valley, Colorado
		Alexander W. Herting and Timothy K. Gates Civil Engineering Department, Colorado State University
	2:15	Improving Drainage of Agricultural Lands for Salinity Problem in the Lower Arkansas Valley
		Rose Rotter and Ramchand Oad Civil Engineering Department, Colorado State University John Wilkins-Wells Sociology Department, Colorado State University
	2:30	Using LANDSAT imagery for detecting soil salinity in corn fields: calibration and validation
		Ayman Elhaddad and Luis A. Garcia Civil Engineering Department, Colorado State University, Fort Collins
	2:45	Improving evapotranspiration estimates in the Lower Arkansas River Valley using ArcGIS Spatial Analyst
		Eric D. Morway, Enrique Triana, Timothy K. Gates Civil Engineering Department, Colorado State University
	3:00	Preliminary Results of Detailed Field Measurements of On-Farm Water Management in the Lower Arkansas River Basin in Colorado
		Andres Jaramillo, Luis Garcia, and Timothy Gates Civil Engineering Department, Colorado State University
	3:15	Uncertainty in Mass-Balance Calculations of Non-Point Source Loads to the Arkansas River
		Jennifer Mueller and Timothy K. Gates Civil Engineering Department, Colorado State University
	3:30	GEODSS: Spatial Basin-Scale Water Quantity and Quality Modeling in the Lower Arkansas River Valley
		Enrique Triana, John W. Labadie, and Timothy K. Gates Civil Engineering Department, Colorado State University
	3:45	Potential contribution of residuals for better prediction of soil salinity from remote sensing data
		Ahmed Edeiry and Luis A Garcia Civil Engineering Department, Colorado State University
	3:45	Mid-afternoon break

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		Hydrologic Modeling - Simulation
		Chair: Jorge A. Ramirez Department of Civil Engineering - CSU
		Cherokee Park Room - Lory Student Center
	4:00	Distributed Modeling of Extreme Floods on a Large Watershed
		John F. England, Jr. Bureau of Reclamation, Flood Hydrology, Denver
	4:15	Measuring sediment production from natural hill-slopes and disturbed surfaces in a dry tropical setting- La Parguera, Puerto Rico
		Carlos E Ramos-Scharrón Dept. of Geography and the Environment, The University of Texas-Austin
	4:30	Hydrologic Analysis and Simulation of the Colorado River System
		Julia A. Keedy, Jose D. Salas, Darrell G. Fontane Department of Civil Engineering, Colorado State University David H. Merritt Colorado River Water Conservation District
	4:45	Developing a Modified GCUH Based on the Geomorphic Characteristics of Korean Mountain Regions
		Hyun-Suk Shin Department of Civil Engineering, Pusan National University, Pusan, S. Korea Pierre Julien Department of Civil Engineering, Colorado State University
	5:00	Flow Trend Analysis in the Rouge River Watershed and the Effect of Temporal Resolution on Trend Detection
		C.A. Rohrer and C.L. Hughes Department of Civil Engineering, Colorado State University
	5:15	Using Water Quality to Validate Groundwater Modeling Results
		Nathaniel A. Beckman and John D. Stednick Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University William E. Sanford Department of Geosciences, Colorado State University
	3:45	Mid-afternoon break
March 22	2:00	Snow Hydrology I
		Chair: Steven Fassnacht Forest, Range and Watershed Stewardship Department, CSU
		North Ball Room - Lory Student Center
	2:00	Assessing the Spatial and Temporal Surface Roughness Using Digital Imagery
		Mark V. Corrao and Steven R. Fassnacht Watershed Science Program, College of Natural Resources, Colorado State University
	2:15	Spatial scaling characteristics of snow depth
		Ernesto Trujillo and Jorge A. Ramirez Department of Civil Engineering, Colorado State University Kelly Elder Rocky Mountain Research Station, USDA Forest Service, Fort Collins, CO
	2:30	Snow depth scaling properties examined at multiple spatial extents
		Jeffrey S. Deems CSU Watershed Science Steven R. Fassnacht CSU Watershed Science
	2:45	Comparison of the spatial organization of snow depth between a forested environment and an alpine environment
		Ernesto Trujillo and Jorge A. Ramirez Department of Civil Engineering, Colorado State University Kelly Elder Rocky Mountain Research Station, USDA Forest Service, Fort Collins, CO 80526, USA

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	3:00	Computational time step of winter water balance for snow losses at United States meteorological stations
		Steven R. Fassnacht Watershed Science Program, College of Natural Resources, Colorado State University
	3:45	Mid-afternoon break
March 22	4:00	Snow Hydrology II
		Chair: Steven Fassnacht Forest, Range and Watershed Stewardship Department, CSU
		North Ball Room - Lory Student Center
	4:00	Reconstructing snow water equivalent in the Rio Grande headwaters using remotely sensed snow cover data and a spatially distributed snowmelt model
		Noah P. Molotch Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado at Boulder
	4:15	Geostatistical Methods for Estimating Snowmelt Contribution to the Annual Water Balance in an Alpine Watershed
		Douglas M. Hultstrand, Steven R. Fassnacht, and John D. Stednick Watershed Science, Colorado State University, Fort Collins, Colorado Robert C. Musselman Rocky Mountain Research Station, USDA, Forest Service, Fort Collins, Colorado
	4:30	Annual hydrochemical fluxes from alpine-subalpine catchments in the Snowy Range, Wyoming
		Dena L. Hicks Watershed Science Master's Student, Colorado State University, Fort Collins, Colorado John D. Stednick, Steven R. Fassnacht Watershed Science, Colorado State University, Fort Collins, Colorado Robert C. Musselman Rocky Mountain Research Station, USDA Forest Service, Fort Collins, Colorado
	4:45	Diurnal changes in isotopic and chemical content of a headwater stream during snowmelt runoff
		Ken Hill, Hillary Hamann ¹ , Mark Williams, and Nel Caine Institute of Arctic and Alpine Research and Department of Geography, University of Colorado at Boulder
		¹ Department of Geography and Environmental Studies, University of Colorado at Colorado Springs
	5:00	Evaporation in the Dry Valleys of Antarctica: A Model of Fractionation across Riparian Zones
		Melissa Northcott and Michael Gooseff Department of Geology and Geological Engineering, Colorado School of Mines, Golden
	5:15	Estimating Changes in Snow Pack Characteristics at The Aspen Ski Area For The Years 2030 And 2100
		Brian Lazar and Joel Smith Stratus Consulting Inc., Boulder, Colorado Mark Williams Institute of Arctic and Alpine Research, University of Colorado, Boulder, Colorado. Tom Wigley National Center for Atmospheric Research, Boulder, Colorado.
		CSU Wind Ensemble Performance: H2O
		University Center for the Arts - Edna Rizley Griffin Concert Hall
		Conductor: Dr. Steven J. Moore

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March 21	8:00	Posters
		<p>Chair: Jorge A Ramirez Department of Civil Engineering, CSU</p> <p>North Ball Room - Lory Student Center</p>
	1	<p><u>Micron-Size Zero-Valent Iron Emplacement in Porous Media Using Polymer Additives: Column and Flow Cell Experiments</u></p> <p>M. Oostrom Environmental Technology Division, Pacific Northwest National Laboratory, Richland, Washington T.W. Wietsma and M.A. Covert Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, Washington V.R. Vermeul Environmental Technology Division, Pacific Northwest National Laboratory, Richland, Washington</p>
	2	<p><u>LNAPLs do not always Float: An Example Case of a Viscous LNAPL under Variable Water Table Conditions</u></p> <p>M. Oostrom Environmental Technology Division, Pacific Northwest National Laboratory, Richland, Washington C. Hofstee TNO, Geo-Energy Division, Utrecht, The Netherlands T.W. Wietsma Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, Washington</p>
	3	<p><u>Plant species composition reveals temporal and spatial dynamics of snow slides in the San Juan Mountains, Colorado</u></p> <p>Sara Simonson Natural Resource Ecology Laboratory, Colorado State University, Fort Collins Thomas Stohlgren USGS Fort Collins Science Center, Fort Collins</p>
	4	<p><u>Water Balance Evaluation and Regionalization Of Albania Rivers Basin</u></p> <p>Niko Pano, Bardhyl Avdyli Hydrometeorological Institute Marenglen Bukli, Koco Gjoka, Institute of Applied Mathematics</p>
	5	<p><u>Post-processing Numerical Weather Forecasts of Precipitation Using Neural Networks</u></p> <p>Raul Passerini and Jorge A. Ramirez Civil Engineering Department, Colorado State University</p>
	6	<p><u>Capacity versus supply limited sediment transport in the Colorado Plateau</u></p> <p>Robert T. Milhous US Geological Survey, Fort Collins, Colorado</p>
	7	<p><u>GIS as a framework for decision support and workflow management systems for watershed management</u></p> <p>Durmus Cesur Watershed Management, GIS Program, San Antonio River Authority, San Antonio, TX 78229</p>
	8	<p><u>Water Resources in Korea</u></p> <p>Yongdeok Cho Department of Civil Engineering, Colorado State University</p>
	9	<p><u>Dry season modeling in Cojedes State, Venezuela by drought analysis of Tirgua river flows</u></p> <p>Edilberto Guevara Civil and Environmental Engineering, Carabobo University, Venezuela Franklin Paredes, Nahir Carballo, Luis Rumbo Universidad Nacional Experimental de los Llanos Ezequiel Zamora. San Carlos, Venezuela.</p>
	10	<p><u>Overtopping analysis – the state of the practice</u></p> <p>Amanda L. Cox Civil Engineering Department, Colorado State University</p>
	11	<p><u>Estimating a stream restoration design discharge</u></p> <p>Tyrel S. West Department of Civil and Architectural Engineering, University of Wyoming,</p>

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12	A tool to delineate watersheds and river network for multiple sites spread over large Digital Elevation Models
	<p>Kiran Chinnayakanahalli and David G. Tarboton Civil and Environmental Engineering Department, Utah State University, Logan, UT John Olson, Ryan Hill, and Chris Kroeber Department of Aquatic, Watershed, and Earth Resources, Utah State University, Logan, UT</p>
13	Spatial and Temporal Variability in the Productivity of Stromatolites, Great Salt Lake, Utah
	<p>Ashley Nielson and David Naftz U.S. Geological Survey-Utah Water Science Center, Salt Lake City, UT 84119</p>
14	Improving Irrigation Water Use in the Middle Rio Grande Conservancy District using a Decision Support System
	<p>Ramchand Oad and Kristoph Kinzli Department of Civil Engineering, Colorado State University</p>
15	Irrigated agriculture and ecology in the Arikaree river basin: finding a sustainable future
	<p>Linda Vandamme and Ramchand Oad Department of Civil Engineering, Colorado State University.</p>
16	Time series analysis of riverine ecosystems
	<p>Robert T Milhous US Geological Survey, Fort Collins, Colorado</p>
17	Hydrologic Analysis for Stream Restoration Study on Junjung River, Penang, Malaysia
	<p>Sahol Hamid Abu Bakar, Shanker Kumar Sinnakaudan Universiti Teknologi Mara, Malaysia</p>
18	Effects of Snow-making, grading, and timber harvest on stream channel morphology in the White River National Forest, Colorado
	<p>Gabrielle David Colorado State University, Department of Geosciences Brian P. Bledsoe Colorado State University, Department of Civil Engineering Dave M. Merritt USFS Rocky Mountain Research Station Ellen Wohl Colorado State University, Department of Geosciences</p>
19	Assessing Performances of Learning Algorithms when Trained using Incomplete Data
	<p>M. Kashif Gill, Tirusew Asefa, and Mac McKee Utah Water Research Laboratory and Department of Civil and Environmental Engineering, Utah State University</p>
20	The performance assessment of surfactant enhanced remediation in a two dimensional heterogeneous aquifers
	<p>Mini Mathew, Yongcheol Kim and Tissa Illangasekare Center for experimental studies, Environmental Engineering Department, Colorado School of Mines</p>
21	A Stochastic Differential Equation Approach for Modeling DNAPL Flow in Heterogeneous Porous Media
	<p>D. W. Dean and T. F. Russell Department of Mathematics, University of Colorado at Denver, Denver, Colorado T. H. Illangasekare Center for Experimental Study of Subsurface Environmental Processes (CESEP), Colorado School of Mines, Golden, Colorado</p>
22	Biologically Enhanced Mass Transfer of PCE from DNAPL Pools: Model Development and Evaluation at Intermediate Scales
	<p>Kent C. Glover, Tissa H. Illangasekare and Junko Munakata-Marr Colorado School of Mines, Division of Environmental Science and Engineering</p>
23	Intermediate-scale experimental methods utilized for the investigation of dissolved phase DNAPL plume persistence in field material representing three typical field domains
	<p>Derrick Rodriguez and Tissa Illangasekare Colorado School of Mines, Center for Experimental Study of Subsurface Environmental Processes (CESEP)</p>
24	Tempe-cell based static capillary pressure – saturation relationships for sands: Conventional averaging method vs. point measurement
	<p>Toshihiro Sakaki and Tissa Illangasekare Colorado School of Mines, Environmental Science and Engineering, Golden, Colorado</p>

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	25	Thermally Enhanced Mass Transfer from Entrapped DNAPL Sources
		Jose Gago and Tissa Illangasekare Center for Experimental Study of Subsurface Environmental Processes, Colorado School of Mines, Golden
	26	Pacific Oceanic / Atmospheric Variability and the Wind River Range
		Kyle Cheesbrough, Tom Watson and Glenn Tootle Department of Civil and Architectural, University of Wyoming
	27	Determination of non-aqueous phase liquid residual saturation in saturated zone due to water flooding
		Anuchit Limswat, Jose Gago, and Tissa H. Illangasekare Center for Experimental Study of Subsurface Environmental Processes (CESEP), Environmental Science and Engineering Department, Colorado School of Mines