Conference Program

AGU Hydrology Days 2005

March 7 - March 9, 2005

Colorado State University

Hydrology Days 2005 Program at a Glance			
	March 7	March 8	March 9
8 am - 6 pm	Posters	Posters	Posters
8 - 9:45 am	River Restoration - Hydraulics	Remote Sensing - GIS	Climate - Drought
9:45 - 10 am	Coffee break	Coffee break	Coffee break
10 - 12 am	Landscape Evolution - Fluvial Geomorphology	Water Resources Management	Soil Moisture Dynamics - Water Balance
12 - 1:30 pm	Lunch Borland Lecture Awards	Lunch Hydrology Days Award Lecture	Lunch break
1:30 - 3:45 pm	Fire and Hydrology	Hydrology Days Award Session I	Remediation - Industrial Releases I
1:30 - 3:45 pm		Irrigation	Snow Hydrology I
3:45 - 4 pm	Coffee break	Coffee break	Coffee break
4 - 6 pm	Erosion - Sedimentation	Hydrology Days Award Session II	Remediation - Industrial Releases II
4 - 6 pm	Stochastic Approaches - Time Series Analysis	Urban Hydrology	Snow Hydrology II

March 7

March 7	**8 AM**	**River Restoration - Hydraulics**
		Chair: Brian Bledsoe **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	8:00	A River Restoration Case Study: Three Forks of the Little Snake River, Colorado John Meyer and Brian P. Bledsoe Department of Civil Engineering, Colorado State University, Fort Collins
	8:15	Mapping Stream Habitat Heterogeneity Using a Flexible Neighborhood Analysis Algorithm Keith D. Olson Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University, Fort Collins Christopher O. Cuhaciyan and Brian P. Bledsoe Department of Civil Engineering, Colorado State University, Fort Collins

	8:30	A Probabilistic Approach for Assessing Effects of Deposited Fine Sediment on Aquatic Insects Blair E. Hurst and Brian P. Bledsoe Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523
	8:45	Scale-dependent Relevance of Watershed, Valley, and Reach Descriptors to Benthic Indices Across Nested Ecoregions of the Pacific Northwest Elaina R. Holburn and Brian P. Bledsoe Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523 N. LeRoy Poff Department of Biology, Colorado State University, Fort Collins, CO 80523 Christopher O. Cuhaciyan Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523
	9:00	Multi-Scale Environmental Filters of Benthic Invertebrate Communities in Mountainous Ecoregions of Oregon and Washington Christopher O. Cuhaciyan Department of Civil Engineering, Colorado State University, Fort Collins Julian D. Olden Center for Limnology, University of Wisconsin, Madison, Wisconsin Brian P. Bledsoe Department of Civil Engineering, Colorado State University, Fort Collins N. LeRoy Poff Department of Biology, Colorado State University, Fort Collins
	9:15	Effects of bendway weir characteristics on resulting eddy and channel flow conditions Kristoph-Dietrich Kinzli Civil Engineering Department, Colorado State University, Fort Collins, Colorado 80523
	9:30	The Effects of Bendway Weirs on Channel Flow Characteristics Paul Schmidt Civil Engineering Department, Colorado State University, Fort Collins
	9:45	**Mid-morning coffee break**
March 7	**10:00**	**Landscape Evolution - Fluvial Geomorphology**
		Chair: Pierre Julien **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	10:00	New Challenges in the Modeling of Landscape Evolution Gary Parker St. Anthony Falls Laboratory, University of Minnesota, Twin Cities, MN
	10:30	Computation of Wash Load in the Yellow River Chih Ted Yang Civil Engineering Department, Colorado State University, Fort Collins, CO Francisco J. M. Simões U.S. Geological Survey, P.O. Box 25046, Mail Stop 413, Lakewood, CO

	10:45	Impacts of Streamflow Production Mechanisms on the Evolution of River Basin Topography: The WE-38 Basin in Pennsylvania Xiangjiang Huang Department of Civil and Environmental Engineering, Pennsylvania State University Jeffrey D. Niemann Department of Civil Engineering, Colorado State University
	11:00	Some influences of channel characteristics on sediment surface roughness in a cellular automata model. Nancy E. Brown Department of Geosciences, Colorado State University, Fort Collins Jorge A. Ramirez Civil Engineering Department, Colorado State University, Fort Collins
	11:15	Overview of Particle Size Trends of Gravel Bars on the Upper Rio Chagres, Panama Francis Rengers Department of Geosciences, Colorado State University, Fort Collins Ellen Wohl Department of Geosciences, Colorado State University, Fort Collins
	11:30	Assessment of Land-Use Impacts on Forced-Pool Characteristics in Constriction-Dominated Channels Jaime Goode and Ellen Wohl Geosciences Department, Colorado State University, Fort Collins, CO
March 7	**12:00**	**Lunch break**
		Presentation of Borland Lectureship Awards: **Borland Lecturer in Hydraulics: Professor Gary Parker** **University of Minnesotta, Twin Cities** **Borland Lecturere in Hydrology: Professor Renzo Rosso** **Politecnico di Milano, Milan, Italy**
March 7	**2:00**	**Fire and Hydrology**
		Chair: Jose D Salas **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	2:00	Water and fire: wildfire forcing of hydrologic processes Renzo Rosso Politecnico di Milano, Milan, Italy
	2:30	Post-fire Erosion at the Hillslope Scale in the Colorado Front Range: Rates and Controls MacDonald, Lee H., and J. Pietraszak Watershed Science Program, Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University, Fort Collins 80523

	2:45	Effectiveness of BAER treatments in reducing post-fire erosion after the Hayman Fire, Colorado Front Range Daniella Rough and Lee H. MacDonald Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University, Fort Collins
	3:00	Assessing the role of ground cover in post-fire runoff and erosion using simulated rainfall, Colorado Front Range Darren J. Hughes and Lee H. MacDonald Forest, Rangeland, and Watershed Stewardship Dept., Colorado State University, Fort Collins
	3:15	Predicting post-fire sediment production at the hillslope scale: Efforts to validate RUSLE and Disturbed WEPP in the Colorado Front Range Isaac J. Larsen and Lee H. MacDonald Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University, Fort Collins
	3:30	Optimization of a Post-Wildfire Hillslope Erosion Model Mary Ellen Miller State University of New York at Buffalo, Civil, Structural & Environmental Engineering
	3:45	**Mid-afternoon coffee break**
March 7	**4:00**	**Erosion - Sedimentation**
		Chair: Lee MacDonald **Forest, Range, and Watershed Stewardship Department, CSU** **Cherokee Park Room - Lory Student Center**
	4:00	BORAMEP Total Load Analysis of the Low Flow Conveyance Channel on the Middle Rio Grande, New Mexico Forrest Jay and Pierre Julien Department of Civil Engineering, Colorado State University, Fort Collins, Colorado
	4:15	Assessing reservoir sedimentation using bathymetric comparison and sediment loading measurements Rathburn, S.L. Department of Geosciences, Colorado State University Finley, J.B. Telesto Solutions, Inc. Klein, S.M Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523 Whitman, B.R. Department of Geosciences, Colorado State University
	4:30	Road Sediment Production and Delivery in the southern Sierra Nevada, California Abby Korte and Lee H. MacDonald Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University

	4:45	Effects of Forest Thinning on Sediment Production and Soil Moisture in the Central Colorado Front Range Ethan Brown and Lee MacDonald Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University, Ft. Collins
March 7	**4:00**	**Stochastic Approaches - Time Series Analysis**
		Chair: Jorge A Ramirez **Department of Civil Engineering, CSU** **Virginia Dale Room - Lory Student Center**
	4:00	Characterizing Droughts for the Colorado River System Zeyad Tarawneh and José D Salas Department of Civil Engineering, Colorado State University, Fort Collins, CO
	4:15	Local Polynomial Method for Ensemble Forecast of Time Series Satish Kumar Regonda and Balaji Rajagopalan Department of Civil Environmental and Architectural Engineering and CIRES, University of Colorado, Boulder, CO Upmanu Lall Department of Earth and Environmental Engineering, Columbia University, New York, NY Martyn Clark Cooperative Institute for Research in Environmental Sciences, University of Colorado, Boulder, CO Young-Il Moon Department of Civil Engineering, University of Seoul, Seoul, Korea
	4:30	Forecasting Annual Streamflows of Colorado Rivers Using Oceanic Climatic Variables Chongjin Fu and José D Salas Department of Civil Engineering, Colorado State University, Fort Collins, CO
	4:45	Modeling and Simulation of Daily Precipitation Tae-Sam Lee and José D Salas Department of Civil Engineering, Colorado State University, Fort Collins, CO
	5:00	Raster-based Analysis and Visualization of Hydrologic Time-Series Richard Koehler, Ph.D. National Oceanic and Atmospheric Administration, National Weather Service, Forecast Decision and Training Branch – COMET program, Boulder, CO.
	5:15	Data Extension of Intermittent Streamflows for the Colorado River Tae-Sam Lee and José D Salas Department of Civil Engineering, Colorado State University, Fort Collins, CO

		Posters **Cherokee Park Room - Lory Student Center**
	1	Simulation Of Dispersion Of Pollutant By Eddy Field Chagas, Patrícia and Souza, Raimundo Department of Environmental and Hydraulics Engineering, Federal University of Ceará, Fortaleza – CE – Brasil.
	2	Development of a Numeric Model, with Explicit Solution, to Study Flood Wave Propagation. Chagas, Patrícia and Souza, Raimundo Department of Environmental and Hydraulics Engineering, Federal University of Ceará, Fortaleza – CE – Brasil.
	3	Study of the Depuration Capacity of a River, Considering the Propagation of a Dynamic Wave. Chagas, Patrícia and Souza, Raimundo Department of Environmental and Hydraulics Engineering, Federal University of Ceará, Fortaleza – CE – Brasil.
	4	Solution of Saint Venant's Equation to Study Flood in Rivers through Numerical Methods Chagas, Patrícia Chagas and Souza, Raimundo Department of Environmental and Hydraulics Engineering, Federal University of Ceará, Fortaleza – CE – Brasil.
	5	Geoelectric in Identifying Ground Water Quality Hamid KAHPOOD and Jafar NAJIHAMMODI Water Resources Section,Civil Engineering Dept.,Power Water Insitute of Technology,Tehran,Iran
	6	Groundwater artificial recharge: actuality, topics and geographical analysis C. Miracapillo Fachhochschule beider Basel (FHBB), Basel (CH) G. Barbiero CNR Water Research Institute (IRSA), Rome (I)
	7	Erosion And Runoff Generation From Fire Disturbed Mediterranean Forest Area Maria Cristina Rulli, Silvia Bozzi, Matteo Spada, Daniele Bocchiola, Renzo Rosso Department of Hydraulic, Environmental, Road and Surveying Engineering, Hydraulics, Fantoli Lab Building, Politecnico di Milano, Piazza Leonardo da Vinci, 32 I-20133 Milano MI Italy
	8	Exploring Relationships Between Geomorphic Factors and Wheat Yield Using Fuzzy Inference Systems Dmitry Kurtener Agrophysical Institute, St.Petersburg, Russia Timothy R. Green USDA- ARS Great Plains Systems Research Unit, Fort Collins, CO Elena Krueger-Shvetsova Agrophysical Institute, St.Petersburg, Russia Robert H. Erskine USDA- ARS Great Plains Systems Research Unit

	9	A Review of Colorado Watershed Projects: Strategies for Implementation Planning and Stakeholder Involvement - In partnership with the Big Thompson Watershed Forum Hilary N. Spitz Department of Forest, Rangeland & Watershed Stewardship; State University, Fort Collins
	10	Evaluating uncertainty of ground-water vulnerability predictions using Latin Hypercube sampling Jason J. Gurdak Geology and Geological Engineering Department, Colorado School of Mines, Golden, CO U.S. Geological Survey, Colorado Water Science Center, Lakewood, CO Sharon L. Qi U.S. Geological Survey, Corvallis, OR John E. McCray Environmental Science and Engineering, Colorado School of Mines, Golden, CO
	11	Calibration and validation of a rainfall-runoff model simulating infiltration and saturation excess Pasquale Versace, Beniamino Sirangelo and Daniela Biondi Dipartimento di Difesa del Suolo, Università della Calabria, Arcavacata di Rende (CS), Italy
	12	Framework for Prioritizing Regulated River Restoration Marisa Escobar and Greg Pasternack Department of Land, Air, and Water Resources, University of California, Davis, C 95616
	13	Experimental investigation of NAPL migration and source zone formation in saturated heterogeneous media Fritjof Fagerlund Air- and Water Sciences, Department of Earth Sciences, Uppsala University, Uppsala, Sweden and Center for Experimental Study of Subsurface Environmental Processes (CESEP), Department of Environmental Science and Engineering, Colorado School of Mines, Golden, CO Tissa Illangasekare Center for Experimental Study of Subsurface Environmental Processes (CESEP), Department of Environmental Science and Engineering, Colorado School of Mines, Golden, Colorado Auli Niemi Air- and Water Sciences, Department of Earth Sciences, Uppsala University, Uppsala, Sweden
	14	Research in the Caspar Creek Experiment Watershed, Northern California Dena Hicks Department of Forest, Rangeland, and Watershed Stewardship, Colorado State University USDA Forest Service: Pacific Southwest Forest and Range Experiment Station
	15	Variation of Downstream Channel Morphology in the Tropical Montane Streams of the Luquillo Mountains, Puerto Rico Andrew Pike Department of Earth and Environmental Science, University of Pennsylvania, Philadelphia, PA F.N. Scatena Department of Earth and Environmental Science, University of Pennsylvania, Philadelphia, PA
	16	Stochastic Simulation of the Truckee River Flow System Chonjin Fu and José D Salas Department of Civil Engineering, Colorado State University, Fort Collins, CO

	17	Modeling Complex Interactions of Overlapping River and Road Networks in a Changing Landscape John Loomis, Melinda Laituri, Jorge A Ramírez, Kirk Sherrill, and Ellen Wohl Colorado State University Alan Covich University of Georgia Paul Box, Todd Crowl and Kaite Hein Utah State University Armando González-Cabán USDA Forest Service Elías Gutíerrez and Luis Santiago University of Puerto Rico Andy Pike, Fred Scatena, and Dana Tomlin University of Pennsylvania
	18	Studies of salt diffusion process and fluxes from seabed sediments to freshwater of the Polder reservoir Xilai Zheng, Zengwen Gao, Junwen Wu Department of Environmental Engineering, Institute of Environmental Science and Engineering, Ocean University of China
	19	Study on the flow of water through non- submerged vegetation Nehal L Water Conservancy and Hydropower Engineering College. Hohai University. Nanjing, China. Yan Zhong Ming Water Conservancy and Hydropower Engineering College. Hohai University. Nanjing, China.
	20	The South Paltte Basin Hydrologic Observatory

		March 8
March 8	**8:00**	**Remote Sensing - GIS – Satellite Data**
		Chair: Luis Garcia **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	8:00	Thresholds Matter: Issues of Topographic Grid Resolution S.R. Fassnacht and M.J. Laituri Watershed Sciences Program, FRWS, Colorado State University, Fort Collins, CO
	8:15	Generating Land Cover Maps for Urban Areas Using Satellite Imagery and Aerial Photography Luis Garcia, Ayman Elhaddad, Elgaali Elgaali and Ahmed Eldeiry Civil Engineering Department, Colorado State University
	8:30	Calculating ET Using Satellite Imagery in the Arkansas Valley of Colorado Luis Garcia and Ayman Elhaddad Department of Civil Engineering, Colorado State University
	8:45	Estimating Soil Salinity from Remote Sensing Data in Corn Fields Ahmed Eldiery Civil Engineering Department, Colorado State University, Fort Collins Luis A. Garcia Civil Engineering Department, Colorado State University, Fort Collins CO 80523 Robin M. Reich Forest, Rangeland and Watershed Stewardship Department, Colorado State University, Fort Collins CO 80523
	9:00	Detecting Soil Salinity Levels in Agricultural Lands Using Satellite Imagery Ayman Elhaddad Department of Civil Engineering Colorado State University Luis Garcia Department of Civil Engineering, Colorado State University Fort Collins, Colorado
	9:15	Assessment of Digital Land Cover Maps for Hydrological Modeling in the Yampa River Basin, Colorado, USA J.M. Repass, S.R. Fassnacht and R.M. Reich Department of Forest, Rangeland and Watershed Stewardship, Colorado State University, Fort Collins, CO
	9:30	Effective Use of Spreadsheets for Hydrology and Water Resources Education Darrell G. Fontane and Jeffrey D. Niemann Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523
	9:45	**Mid-morning coffee break**

March 8	**10:00**	**Water Resources Management**
		Chair: Jorge A. Ramirez **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	10:00	Water Law in Colombia: Experience and Status Neil S. Grigg Civil Engineering Department, Colorado State University, Fort Collins, CO 80523
	10:15	Working Paper on Hydrologic Models in the Courtroom Daniel F. Luecke, Ph.D. 3870 Norwood Court Boulder, Colorado 80304
	10:30	Decision-support models for efficient irrigation water management—a case study of middle Rio Grande Ramchand Oad, Luis Garcia and Roy Gallea Civil Engineering Department, Colorado State University, Fort Collins, CO 80523
	10:45	South Platte Decision Support System: Irrigated Lands Assessment And Consumptive Use Modeling Claudio A. Schneider, PhD Riverside Technology, inc. Fort Collins, CO 80525 Erin M. Wilson, PE Leonard Rice Engineers, Inc.Denver, CO 80228 Timothy C. Martin, PhD Riverside Technology, inc. Fort Collins, CO 80525
	11:00	A Case Study: San Antonio River Authority Enterprise GIS Implementation Durmus Cesur San Antonio River Authority, San Antonio, TX 78229
	11:15	Water Resources in Spain: The Ebro River Interbasin Transfer Project and the "Programa Agua" Roberto Arranz Water Resources Planning and Management Division, Civil Engineering Department, Colorado State University, Fort Collins
March 8	**12:00**	**Lunch break**
		Presentation of Hydrology Days Award **Hydrology Days Award Recipient: C.A. Troendle** **Rocky Mountain Research Station, USDA Forest Service** **Hydrology Days Award Lecture**

March 8	**2:00**	**Hydrology Days Award Session I- Watershed Science**
		Chair: Lee MacDonald **Department of Forest, Range, and Watershed Stewardship, CSU** **Cherokee Park Room - Lory Student Center**
	2:00	The legacy of watershed science at Colorado State University Jim Meiman and Freeman Smith Forest, Range and Watershed Stewardship Department, Colorado State University
	2:20	The Effect of Timber Harvest on the Fool Creek Watershed, 49 Years Later Kelly Elder Rocky Mountain Research Station, USDA Forest Service, 240 West Prospect Road, Fort Collins, CO 80526 Laurie Porth Rocky Mountain Research Station, USDA Forest Service, 240 West Prospect Road, Fort Collins, CO 80526 Chuck Troendle Inventory and Monitoring Institute, USDA Forest Service, 2150 Centre Avenue Building A, Fort Collins, CO 80526
	2:40	Subalpine ecosystem nutrient budgets, 1982-2004, Lexen Creek, Fraser Experimental Forest, Colorado Robert Stottlemyer USGS-BRD 2150 Centre Ave., Bldg. C Ft. Collins, CO 80526
	3:00	Wood dynamics in Rocky Mountain streams over 8 years Ellen Wohl Department of Geosciences, Colorado State University
	3:20	Long-term Effects of Clearcutting on N Availability and Soil Solution Chemistry in the Fraser Experimental Forest, CO Banning Starr USDA Forest Service Rocky Mountain Research Station, 240 West Prospect, Fort Collins, CO 80526 Robert Stottlemyer U.S. Department of the Interior U.S. Geological Survey, 2150 Centre Avenue, Bldg C , Fort Collins, CO 80526 Kelly Elder USDA Forest Service Rocky Mountain Research Station, 240 West Prospect, Fort Collins, CO 80526 Chuck Rhoades USDA Forest Service Rocky Mountain Research Station, 240 West Prospect, Fort Collins, CO 80526
	3:45	**Mid-afternoon coffee break**

March 8	**2:00**	**Irrigation - Salinity**
		Chair: Luis Garcia **Department of Civil Engineering, CSU** **Room 208 - Lory Student Center**
	2:00	Mass Balances of Irrigation-Induced Salinity and Selenium in Reaches of the Arkansas River Jennifer Mueller Civil Engineering Department, Colorado State University, Fort Collins, CO Timothy K. Gates Professor, Civil Engineering Department, Colorado State University, Fort Collins, CO
	2:15	Using Kriging Interpolation Techniques for Mapping Soil Salinity in Arkansas River Basin Ahmed Eldiery Civil Engineering Department, Colorado State University, Fort Collins Luis A. Garcia Civil Engineering Department, Colorado State University, Fort Collins CO 80523 Robin M. Reich Forest, Rangeland and Watershed Stewardship Department, Colorado State University, Fort Collins CO 80523
	2:30	Water Application and Irrigation Efficiencies in Selected Fields in the Arkansas River Valley Andres Jaramillo, Luis Garcia and Timothy Gates Civil Engineering Department, Colorado State University. Fort Collins
	2:45	Effect of Irrigation and Ammonium Sulfate Fertilizer on Phosphorus Transport through Runoff and Deep Percolation from Grassed Plots Jennifer E. Morgan Civil Engineering Department, Colorado State University, Fort Collins Jim C. Loftis Professor, Civil Engineering Department, Colorado State University, Fort Collins
	3:00	Evaluation of Application Efficiency of Furrow Irrigation Systems in Clay Soils Ahmed Eldiery Civil Engineering Department, Colorado State University, Fort Collins Luis A. Garcia Civil Engineering Department, Colorado State University, Fort Collins CO 80523
	3:15	Sensitivity of Irrigation Water Supply to Climate Change in the Great Plains Region of Colorado Elgaali Elgaali Civil Engineering Department, Colorado State University, Fort Collins Luis A. Garcia Civil Engineering Department, Colorado State University, Fort Collins
	3:45	**Mid-afternoon coffee break**

March 8	**4:00**	**Hydrology Days Award Session II- Watershed Science**
		Chair: Lee MacDonald **Department of Forest, Range, and Watershed Stewardship, CSU** **Cherokee Park Room - Lory Student Center**
	4:00	Landscape controls on the nitrogen biogeochemistry of high elevation ridges Chuck Rhoades US Forest Service, Rocky Mountain Research Station Eugene Kelly Department of Crop and Soil Sciences, Colorado State University Banning Starr US Forest Service, Rocky Mountain Research Station
	4:20	Coarse sediment transport observations from St. Louis Creek watershed, Fraser Experimental Forest, Fraser, CO Sandra E. Ryan-Burkett Research Hydrologist/Geomorphologist, USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO
	4:40	The East St. Louis Creek debris basin: serving a variety of research questions Kristin Bunte Engineering Research Center, Department of Civil Engineering, Colorado State University, Fort Collins Steven R. Abt Engineering Research Center, Department of Civil Engineering, Colorado State University, Fort Collins
	5:00	Snowpack simulation using the Simultaneous Heat and Water (SHAW) model at a continental subalpine site near Fraser, Colorado, USA Angus Goodbody USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO 80526, USA Gerald Flerchinger USDA Agricultural Research Service, Northwest Watershed Reseach Center, Boise, ID 83712, USA Kelly Elder USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO 80526, USA
March 8	**4:00**	**Urban Hydrology**
		Chair: Larry Roesner **Department of Civil Engineering, CSU** **Room 208- Lory Student Center**
	4:00	Are Our Urban Runoff Design Practices Really Saving Our Stream? Larry A. Roesner, P.E. Civil Engineering, Colorado State University

	4:15	An analytical approach to obtain the cumulative distribution function for maximum discharges and total volumes in Urban Watersheds P. Rivera Departmento de Ingeniería Hidráulica y Ambiental, Universidad Católica de Chile, Santiago, Chile J. Gironás, Department of Civil Engineering, Colorado State University, Fort Collins, Colorado 80523 USA J. P. Montt and B. Fernández Departmento de Ingeniería Hidráulica y Ambiental, Universidad Católica de Chile, Santiago, Chile
	4:30	Impacts of Septic Tank Effluent from a Proposed Residential Development on Water Quality, Adams County, Colorado Kirk Heatwole Environmental Systems Modeling, Environmental Science and Engineering Division, Colorado School of Mines, Golden John McCray Environmental Science and Engineering Division, Colorado School of Mines, Golden
	4:45	An urban geomorphic assessment of the Berryessa Creek and Upper Penitencia Creek watersheds in San José, CA. Brett Jordan, C.C. Watson Department of Civil Engineering, Colorado State University, Fort Collins CO W.K. Annable Department of Civil Engineering, University of Waterloo, Waterloo, Ontario, Canada D. Sen Santa Clara Valley Water District, 5750 Almaden Expressway, San Jose, CA
	5:00	Modification of Anaerobic Digestion Model No. 1 for Accumulation and Biomass Recycling 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

		March 9
March 9	**8:00**	**Climate - Drought**
		Chair: Jorge A. Ramirez **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	8:45	Influence of Hydroclimate on Characteristics of Hydrograph Evolution in Snowmelt-Dominated River Systems Matter, Margaret A., Luis Garcia and Darrell Fontane Civil Engineering Department, Colorado State University, Fort Collins
	9:00	A review of the 2004 water year in Colorado Nolan J. Doesken Colorado Climate Center, Atmospheric Science Department, Colorado State University, Fort Collins, Colorado Michael A. Gillespie Snow Survey Division, Natural Resources Conservation Service, US Department of Agriculture, Lakewood, Colorado
	9:15	Drought Impacts on the timing and influent water quality to Barr Lake, Colorado Curtis Cooper Department of Soil and Crop Sciences, Colorado State University, Fort Collins 80523-1130. Curtis.Cooper@ColoState.edu. David Gilbert Department of Civil Engineering, Colorado State University, Fort Collins 80523-1372 John Stednick Department of Forest, Rangeland and Watershed Stewardship, Colorado State University, Fort Collins 80523-1472
	9:30	Agricultural water quality in eight off-channel reservoirs in the South Platte River Basin, Colorado Curtis Cooper Department of Soil and Crop Sciences, Colorado State University, Fort Collins 80523-1130. John Stednick Department of Forest, Range and Watershed Stewardship, Colorado State University, Fort Collins 80523-1472 Emile Hall Elias Auburn University
	9:45	**Mid-morning coffee break**

March 9	**10:00**	**Soil Moisture Dynamics - Water Balance**
		Chair: Tim Gates **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	10:00	Estimating Seasonality Impact on Catchment-Scale Water Balance Using Top-down Approach Klaus Hickel and Lu Zhang CSIRO Land and Water, Christian Laboratory, Canberra, A.C.T. Australia
	10:15	Identifying the importance of regional characteristics on soil moisture patterns across a range of scales Summer Conklin and Jeffrey D. Niemann Department of Civil Engineering, Colorado State University
	10:30	Typhoon Maemi and Impacts on Lower Nakdong River, South Korea Un Ji and Pierre Julien Civil Engineering, Engineering Research Center, Colorado State University, Fort Collins
	10:45	Updated Database of the Middle Rio Grande, New Mexico Susan Novak and Pierre Julien Department of Civil Engineering, Colorado State University, Fort Collins, CO
	11:00	Hydrologic interactions between an alluvial fan and a slope wetland in the central Rocky Mountains Scott W. Woods University of Montana, Dept. of Ecosystem and Conservation Sciences Missoula MT 59812 Lee H. MacDonald and Cherie J. Westbrook Colorado State University, Dept. of Forest, Rangeland and Watershed Stewardship Fort Collins, CO 80523
	11:15	Water Law in Colombia: Experience and Status Neil S. Grigg Civil Engineering Department, Colorado State University, Fort Collins, CO 80523
March 9	**12:00**	**Lunch break**
March 9	**2:00**	**Groundwater - Remediation - Industrial Releases I**
		Chair: David Gilbert **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	2:00	Elements of a Well-Designed Protocol for Managing Releases of Chlorinated Solvent Tom Sale Civil Engineering Department, Colorado State University, Fort Collins, CO

	2:15	Lumping analysis for abiotic transport modeling of an organic pollutant mixture Jin Chul Joo Civil Engineering Department, Colorado State University, Fort Collins, CO Timothy B. Miller Chemical Engineering Department, Colorado State University, Fort Collins, CO Charles D. Shackelford Civil Engineering Department, Colorado State University, Fort Collins, CO Kenneth F. Reardon Chemical Engineering Department, Colorado State University, Fort Collins, CO
	2:30	Phosphorus sorption and precipitation characterization at a wastewater infiltration site; Mines Park, CO Sarah E. Doyle, John E. McCray, Geoffrey D. Thyne, Kathryn S. Lowe Colorado School of Mines, Golden CO
	2:45	Improved reagent delivery using hydraulic fracturing during enhanced reductive dechlorination James Dawe, P.G. ARCADIS, Highlands Ranch, Colorado, USA, Scott D. Andrews, P.E. and Craig Divine, Ph.D. ARCADIS, Highlands Ranch, Colorado, USA
	3:00	Prediction of ZVI-Clay Performance for Remediation of Chlorinated Solvent Source Zones Mitchell Olson and Tom Sale Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523-1320
	3:15	Comparison of inocula applied in the remediation of heavy metals by sulfate reduction L.P. Pereyra Department of Civil Engineering, Colorado State University R. Hanson Department of Chemical Engineering, Colorado State University S. Hiibel Department of Chemical Engineering, Colorado State University A. Pruden Department of Civil Engineering, Colorado State University K.F. Reardon Department of Chemical Engineering, Colorado State University
	3:30	Modified Use of the “SDF” Semi-Analytical Stream Depletion Model in Bounded Alluvial Aquifers Calvin D. Miller and Deanna S. Durnford Civil Engineering Department, Colorado State University, Fort Collins, Colorado
	3:45	**Mid-afternoon coffee break**

March 9	**2:00**	**Snow Hydrology I**
		Chair: Steven Fassnacht **Department of Forest, Range, and Watershed Stewardship, CSU** **Room 213/215 - Lory Student Center**
	2:00	NASA Cold Land Processes Experiment (CLPX): Field Measurements of Snowpack Properties and Soil Moisture Kelly Elder Rocky Mountain Research Station, USDA Forest Service, 240 West Prospect Road, Fort Collins, CO 80526 Don Cline National Operational Hydrological Remote Sensing Center, National Weather Service, 1735 Lake Drive West, Chanhassen, MN 55317 Glen Liston Department of Atmospheric Sciences, Colorado State University, Fort Collins, CO 80523 Richard Armstrong National Snow and Ice Data Center, University of Colorado, Boulder, CO 80309
	2:20	Analysis of the scaling characteristics of snow depth in the Colorado Rocky Mountains Ernesto Trujillo-Gómez and Jorge A. Ramírez Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523-1372, USA Kelly Elder Rocky Mountain Research Station, USDA Forest Service, Fort Collins, CO 80526, USA
	2:40	Fractal distribution of snow depth from LiDAR data Jeffrey S. Deems Geosciences, Colorado State University Steven R. Fassnacht Watershed Science, Colorado State University Kelly J. Elder US Forest Service Rocky Mountain Experiment Station, Fort Collins, CO
	3:00	Scalability and Measurement Density for Montane Snow Depth and Elevation Data at Several Colorado Sites S.R. Fassnacht and J.S. Deems Watershed Sciences Program, Colorado State University, Fort Collins, CO
	3:20	Scaling snow observations from the point to the grid-element: implications for observation network design. Noah Molotch Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado Roger Bales Division of Engineering, University of California, Merced
		Mid-afternoon coffee break

March 9	**4:00**	**Groundwater - Remediation - Industrial Releases II**
		Chair: Tom Sale **Department of Civil Engineering, CSU** **Cherokee Park Room - Lory Student Center**
	4:00	Use of carboxymethyl-beta-cyclodextrin (CMCD) as flushing agent for remediation of metal contaminated soil Skold, Magnus.V., Thyne, Geoffrey. D. Department of Geology and Geological Engineering, Colorado School of Mines, Golden, CO McCray, John. E. Environmental Science and Engineering Division, Colorado School of Mines, Golden, CO Drexler, John. W. Geological Sciences, University of Colorado at Boulder, CO
	4:15	Field Analysis of LNAPL Flux Using Well Bore Dilution Techniques Gabriel Iltis, Ryan Taylor and Tom Sale Civil Engineering Department, Colorado State University, Fort Collins, CO
	4:30	Electrolytic Reactive Barriers for Treatment of Energetic Compounds in Groundwater David Gilbert and Tom Sale Department of Civil Engineering, Colorado State University
	4:45	AFCEE Source Zone Initiative - Back Diffusion of Contaminants in Source Zones and Plumes Julio Zimbron Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523 Tom Sale Department of Civil Engineering, Colorado State University, Fort Collins, CO 80523 David Dandy Department of Chemical Engineering, Colorado State University, Fort Collins, CO 80523 Tissa Illangasekare Division of Environmental Science and Engineering, Colorado School of Mines, Golden, CO 80401 Derrick Rodriguez Division of Environmental Science and Engineering, Colorado School of Mines, Golden, CO 80401 Bart Wilking Division of Environmental Science and Engineering, Colorado School of Mines, Golden, CO 80401
	5:00	Carbon tetrachloride removal from a heterogeneous porous medium by two soil vapor extraction techniques M. Oostrom Environmental Technology Division, Pacific Northwest National Laboratory, Richland, Washington J.H. Dane Department of Agronomy and Soils, Auburn University, Alabama T.W. Wietsma Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory, Richland, Washington
	5:15	Numerical simulation of surface barriers for shrub-steppe ecoregions Mark D. White and Andy L. Ward Hydrology Group, Environmental Technology Directorate, Pacific Northwest National Laboratory, Richland, Washington

	5:30	Effects of Water Saturation on a Resistivity Survey of an Unconfined Fluvial Aquifer in Columbus, MS John W. Koster (MS) Department of Geosciences, Natural Resources Colorado State University Fort Collins, CO 80523 Tel: (970) 420-5686 e-mail: jkoster@cnr.colostate.edu Dennis L. Harry Department of Geosciences, Natural Resources Colorado State University Fort Collins, CO 80523 e-mail: dharry@cnr.colostate.edu
March 9	**4:00**	**Snow Hydrology II**
		Chair: Steven Fassnacht **Department of Forest, Range, and Watershed Stewardship, CSU** **Room 213/215 - Lory Student Center**
	4:00	Modeling Distributed Snowpack Properties as a Mechanism for Identifying Elk Distribution Patterns in the Northern Elk Winter Range, Yellowstone National Park Craig Anderson and Mark Williams Department of Geography, University of Colorado-Boulder Institute of Arctic and Alpine Research (INSTAAR) Robert Crabtree Yellowstone Ecological Research Center Bozeman, Montana
	4:20	Evaluation of Two Ultrasonic Snow Depth Sensors for National Weather Service Automated Surface Observation System Sites W.A. Brazenec Department of Forest, Rangeland and Watershed Stewardship, Colorado State University, Fort Collins, Colorado USA 80523-1472 N.J.Doesken Department of Atmospheric Sciences, Colorado State University, Fort Collins, Colorado USA 80523-1371 S.R. Fassnacht Department of Forest, Rangeland and Watershed Stewardship, Colorado State University, Fort Collins, Colorado USA 80523-1472
	4:40	Probablistic snow mapping using station data Martyn P. Clark and Andrew G. Slater Center for Science and Technology Policy Research, University of Colorado, Boulder
	5:00	Physiographic Influences on Snowpack Variability in the Upper Colorado Basin using Snowpack Telemetry (SNOTEL) data J. Derry and S.R. Fassnacht Watershed Science Program, College of Natural Resources, Colorado State University, Fort Collins, Colorado, USA