HYDROLOGY DAYS 2001
Conference Program

Date	Start	Speaker/Title
April 2, 2001	08:00	Registration
	09:00	**STREAM STRUCTURES/STABILITY** Cherokee Park Room Session Chair: Professor Chester Watson
	9:00	**Physical Modeling Of Channel Maintenance Structures On Bends Of The Rio Grande** Michelle Heintz, Department Of Civil Engineering, Colorado State University, Fort Collins, CO
	9:20	**Performance Testing Of Turf Reinforcement Mats** Brian Smith, Hydraulics Program, Civil Engineering Department, Csu, Fort Collins, Co 80523
	9:40	**Articulated Concrete Block Performance Testing At The Colorado State University Engineering Research Center Hydraulics Lab.** Chance Bitner, Hydraulics Program, Civil Engineering Department, CSU, Fort Collins, CO
	10:00	**Investigation Of The Accuracy And Geometry Of Velocity Head Rods** Jamie Darrow, Hydraulics Program, Civil Engineering, CSU, Fort Collins, CO
	10:20	**Morning Coffee Break**
	10:40	**FLUVIAL GEOMORPHOLOGY-EROSION-SEDIMENTATION** Cherokee Park Room Session Chair: Professor Chester Watson
	10:40	**Wave Drag Forces Contributing To Log Movement Within Streams: A Flume Experiment** Carlos V. Alonso, USDA-ARS, National Sedimentation Laboratory, Oxford, MS, Nicholas P. Wallerstein, Department of Geography, University of Nottingham, U.K., Sean J. Bennett, USDA-ARS, National Sedimentation Laboratory, Oxford, MS, And Colin R. Thorne, Department of Geography, University of Nottingham, U.K
	11:00	**Stochastic Variability Of Fluvial Hydraulic Geometry And Contribution To Uncertainty In Flow Prediction** Timothy K. Gates, Civil Engrg. Dept., Colorado State Univ., Fort Collins, CO; Daniel L. Buhman, Hydraulic Engineer, McLaughlin Water Engineers, 2420 Alcott St., Denver, CO; Jason Ullmann, Hydraulic Engineer, Ayres Associates, Boulder, CO, 80303; and Chester C. Watson, Civil Engrg. Dept., Colorado State Univ., Fort Collins, CO
	11:20	**Optimal Energy Expenditure, Discharge Skewness, And Geomorphic Effectiveness In Relation To The Area-Slope Relationship** D.A. Raff And B. P. Bledsoe; Civil Engineering Department; Colorado State University
	11:40	**Determination Of The Manning Coefficient "N" For Large Rivers Of Venezuela Using The Flow Velocity Variation Functions** Edilberto Guevara and Humberto Cartaya, Civil Engineering, Universidad De Carabobo, Valencia, Venezuela

12:00 **Lunch**

13:20 **STOCHASTIC APPROACHES/RISK ASSESSMENT**
Cherokee Park Room
Session Chair: Jose D Salas

13:20 **Categorical Climate Forecasts Through Regularization And Optimal Combination Of Multiple GCM Ensembles**
Balaji Rajagopalan, Civil, Env. & Arch. Eng, Univ. Of Colorado, Boulder, CO, Upmanu Lall, Earth & Env. Eng, And Columbia Earth Institute, Columbia Univ., New York, NY, Civil & Env. Eng, And Utah Water Research

13:40 **Comparison Of The Index Flood Method And The Population Index Flood Method Using Extreme Precipitation Data**
Oli G. B. Sveinsson And Jose D. Salas, Department Of Civil Engineering, Colorado State University, Fort Collins; and Duane C. Boes, Department Of Statistics, Colorado State University, Fort Collins

14:00 **Comparison Of Natural Streamflows Generated From A Parametric And Nonparametric Stochastic Model**
James Prairie(1,2), Balaji Rajagopalan(2) And Terry Fulp(1); 1. CADSWES, University Of Colorado At Boulder; 2. Dept. Of Civil, Env. And Arch. Engg., University Of Colorado At Boulder

14:20 **Landscape Patterns And Hydrologic Variability Affecting Soil Water Contents And Crop Yields And Their Scaling Relationships**
Timothy R. Green, Lajpat R. Ahuja, Robert H. Erskine And Michael R. Murphy; USDA-ARS, Great Plains Systems Research Unit, Fort Collins, CO

14:40 **Testing And Application Of Spatial Analysis Neural Networks: Sensitivity To Structural Parameters**
Ana Martinez and Jose D. Salas; Department Of Civil Engineering, Colorado State University, Fort Collins, CO; Timothy R. Green, USDA-ARS, Great Plains Systems Research Unit, Fort Collins, Co

15:00 **Application Of Fuzzy Set Theory To Predict Engineering Risk Caused By An Ocean Discharge System In The Region Of Pecem-Northeast Of Brazil.**
Raimundo Souza, Patricia Chagas, Departamento De Engenharia Hidráulica E Ambiental, Centro De Tecnologia - UFC, Fortaleza, Ceará

15:20 **Afternoon Coffee Break**

15:40 **FORECASTING**
Cherokee Park Room
Session Chair: Professor Jose D Salas

15:40 **Effects Of Enso And PDO On Water Supply In The Columbia River Basin**
Steven B. Barton, Hydraulic Engineer, U.S. Army Corps of Engineers, Seattle District and Jorge A. Ramírez, Civil Engineering Department, CSU, Fort Collins, CO

16:00 **Modeling Earth Climate System With Dynamic Area Fraction Models.**
Keith Nordstrom And Vijay Gupta, Civil Engineering Department, CU Boulder, CO

16:20 **CPC's Seasonal Precipitation Forecasts Versus Climatology: How Different Are They?**
Jeanne M. Schneider and Jurgen D. Garbrecht, USDA ARS Grazinglands Research Laboratory, El Reno, Ok

16:40 **Application Of Flash Flood Information In Natural Disaster Reduction**
Christopher R. Adams, CIRA, Colorado State University; Eve Gruntfest, University Of Colorado, Colorado Springs; and Raymond D. Watts, USGS.

17:00 **Short-Term Hydrological Forecasting On Drini And Mati Rivers Basins Of Albania**
Bardhyl Avdyli, Albanian Academy Of Sciences, Hydrometeorological Institute, Tirana, Albania; Koço Gjoka, Albanian Academy Of Sciences, Institute Of Informatics And Applied Mathematics, Tirana, Albania

17:20 **Modeling and Simulation of the Spatial and Temporal Response of Precipitation to El Niño/Southern Oscillation (ENSO) phenomenon – The Case of Western Colombia**
Saul Marin and Jorge A. Ramírez, Water Resources, Hydrologic, and Environmental Sciences Division, Civil Engineering Department, Colorado State University

17:40 **Adjourn**

April 3, 2001

08:00 **Registration**

08:20

HABITAT/ECOSYSTEMS

Cherokee Park Room

Session Chair: Professor Jorge A. Ramirez

08:20 **An Experimental Study Of Channel Habitat Improvement For Formosan Salmon**
Chao-Hsien Yeh and Hui-Pang Lien, Department Of Land Management, Feng Chia University

08:40 **The Effectiveness Of Instream Structures For Improving Fish Habitat**
Cari McCown, Colorado State University, Deptartment Of Earth Resources, Ft. Collins, CO

09:00 **Needs In The Quantification Of Páramo Ecosystems Hydrology-Applicable Model Proposal**
Juan Antonio Sáenz U. [and] Mario Díaz-Granados O., Civil & Environmental Eng. Dep., Los Andes University, Bogotá, Colombia.

9:20 **Hydrological Needs Of Endangered Fishes In Western Rivers**
Richard A. Valdez, Ph.D., Senior Scientist, Swca, Inc., Environmental Consultants, Logan, Ut 84321

09:40 **Mid-morning break**

MODELING WATERSHED PROCESSES

Cherokee Park Room

Session Chair: Professor Lee MacDonald

10:00 **Modeling The Snow Surface Temperature In An Energy Balance Snowmelt Model**
You Jinsheng, David G. Tarboton, Department Of Civil And Environmental Engineering, Utah State University, Logan, Utah And Charles H. Luce USDA Forest Service, Rocky Mountain Research Station, Boise, Idaho

10:20 **Flow Path Dependent Weathering Rate Calculation Methods For Streams And Watersheds.**
Michael Gooseff and Diane Mcknight, University Of Colorado, Institute Of Arctic And Alpine Research, Boulder, CO

10:40 **Soil Loss From A Rapidly Eroding Pinyon-Juniper Woodland In Bandelier National Monument, New Mexico: Response To Slash Mulch Treatment**
Brian K. Hastings And Freeman M. Smith, Watershed Science Program, Department Of Earth Resources, Colorado State University, Ft Collins, CO.

11:00 **Measuring And Predicting Runoff And Sediment Yield From An Unpaved Road Segment, St. John, U.S. Virgin Islands**
Carlos E. Ramos-Scharron, And Lee H. Macdonald; Dept. Of Earth Resources, CSU

11:20 **Landslide volumes and estimated landslide sediment delivery to streams in the central Sierra Nevada, California.**
Nancy E. Brown, Department of Earth Resources, Colorado State University.

11:40 **Digital Elevation Model Resolution And Accuracy: Implications For Modeling Hydrologic Processes**
Rob Erskine, Civil Engineering Department, CSU, Fort Collins, CO and USDA-ARS

12:00 **Luncheon – Longs Peak Room**

Stanley A. Schumm, Distinguished Emeritus Professor, Department of Earth Resources, Colorado State University. Keynote speaker at luncheon on April 3, 2001.

SESSION IN HONOR OF STANLEY SCHUMM - I

Cherokee Park Room
Session Chair: Professor Lee MacDonald

13:40 **Variability Of Large Alluvial Rivers**
Stanley A. Schumm; Distinguished Professor Emeritus, Earth Resources Department, Colorado State University, Fort Collins, Co 80523

14:00 **Avulsion And Crevassing In The Lower Niobrara River, Northeast Nebraska: Complex Response To Base-Level Rise And Aggradation**
Frank G. Ethridge, Department Of Earth Resources, Colorado State University, Fort Collins, CO

14:20 **Human-Induced Variability of A Formerly Large River: The San Joaquin River, California**
Michael D. Harvey And Robert A. Mussetter, Mussetter Engineering, Inc., Fort Collins, Colorado

14:40 **Developing A "Reference" Sediment Transport Relationship**
C.A. Troendle, Consulting Hydrologist, Inventory and Monitoring Institute, Ft. Collins, CO, D. Rosgen, S. Ryan, L. Porth, And J.Nankervis

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15:00 .**Afternoon Coffee Break**

15:20 **SESSION IN HONOR OF STANLEY SCHUMM - II**

Cherokee Park Room
Session Chair: Professor Timothy K. Gates

15:20 **The Study of Rivers**
Pierre Julien, Professor, Civil Engineering Department, Colorado State University, Fort Collins, CO 80523-1372

15:40 **Quantification Of Incised Channel Evolution And Equilibrium**
Chester C. Watson, Brian P. Bledsoe, Civil Engineering Department, Colorado State University, Fort Collins, Co 80523, And David S. Biedenharn, Research Hydraulic Engineer, Water Experiment Station, U.S. Army Corps Of Engineers, Vicksburg, MS 39180

16:00 **A Probabilistic Approach For Channel Initiation**
Erkan Istanbulluoglu, David G. Tarboton, Robert T. Pack, Civil And Environmental Engineering Department, Utah State University, Logan, UT; and Charles Luce, U.S. Forest Service, Rocky Mountain Research Station, Boise, Idaho

16:20 **Energy Minimization And Channel Morphology: Interactions Between Sedimentary And Vegetative Controls**
Brian Bledsoe, Department Of Civil Engineering, Colorado State University, Fort Collins, CO

16:40 **Onset Of Gravel Motion In Mountain Gravel-Bed Streams: Computations Based On Bedload Measurements**
Kristin Bunte, S.R. Abt And J.P. Potyondy, Engineering Research Center, Colorado State University, Fort Collins, CO 80523.

17:00 **Adjourn**

April 4, 2001 08:00 **Registration**

09:00 **GROUNDWATER – FLOW IN POROUS MEDIA – INFILTRATION - I**

Cherokee Park Room

Session Chair: Professor Jim Warner

09:00 **Investigation Of Analytical And Numerical Models For Simulating Surface Water/Groundwater Interaction**
G. A. Fox and D. S. Durnford, Civil Engineering Department, CSU, Fort Collins, CO

09:20 **NAPL Migration In Response To Hydraulic Controls At The Brooklawn Site Near Baton Rouge, Louisiana**
Mark D. White And Mart Oostrom, Hydrology Group, Pacific Northwest National Laboratory, Richland, Washington

09:40 **Water Supply From Brackish Coastal Aquifers. 1. System Concept; 2. Natural Recharge Estimation; 3. Screening Model For An Optimal Artificial Recharge Strategy.**
Pedro J. Restrepo[1], Elena Georgopolou[2], Katerina Mazi[2], Anastasia Kotronarou[2], Antonis Koussis[2]; [1]Optimal Decision Engineering Corporation, Boulder, CO 80302. Pjr@optimaldecision.com; [2]National Observatory of Athens, Athens, Greece

10:00 **Examples Of Low Cost Single-Well Tracer Tests**
Craig E. Divine, Arcadis Geraghty & Miller, Inc., Highlands Ranch, Colorado,and Greg Johnson, Earth Resources Department, Colorado State University, Fort Collins, Colorado

10:20 **Mid-morning break**

10:40 **GROUNDWATER – FLOW IN POROUS MEDIA – INFILTRATION - II**

Cherokee Park Room

Session Chair: Professor Jim Warner

10:40 **Historical And Recent Developments In Mathematical Modeling Of Infiltration In Hydrology**
William L. Hogarth, Calvin W. Rose, Faculty Of Environmental Sciences, Griffith University, Nathan, Queensland; Tammo S. Steenhuis, and J.-Yves Parlange, Dept. Of Agricultural and Biological Engineering, Cornell University

11:00 **Mathematical Modeling Of Unsaturated Water Flow In Wastewater Soil Absorption Systems**
D. Huntzinger, J. McCray, Dept. Of Geology And Geological Engineering, Colorado School Of Mines, Golden, CO; S. Van Cuyk, R. Siegrist, Environmental Science & Engineering Division, Colorado School Of Mines, Golden, CO

11:20 **Application Of UCODE (An Inverse Model) To Estimate Hydrologic And Storage Zone Parameters In A Mountain Stream**
Durelle T. Scott, Michael N. Gooseff, University Of Colorado At Boulder, Institute Of Arctic And Alpine Research, Boulder, Colorado 80309-0450

11:40 **Investigations of the Groundwater Salinization of the Sahel Coastal Aquifer System (Coastal Meseta, Morocco.**
Mohamed Hilali, Mohammadia School of Engineers, Rabat, Morocco

12:00 **Luncheon – Longs Peak Room**

Keynote Speaker: Neil S. Grigg, Professor, Department of Civil Engineering, Colorado State University.

Topic**: Water Crises: fragmented problems and integrated solutions**

13:20 **EVAPOTRANSPIRATION/PRECIPITATION**
Cherokee Park Room
Session Chair: Professor Darrell Fontane

13:20 **Recent (1952-1993) Trends In Pan Evaporation, Actual Et And Consumptive Water Use For Irrigated Fields In Eastern Colorado**
William J Parton, NREL, Fort Collins, CO 80523

13:40 **Trends In Regional Evapotranspiration Across The United States Under The Complementary Relationship Hypothesis**
Michael T. Hobbins and Jorge A. Ramírez, Water Resources, Hydrologic And Environmental Sciences Division, Civil Engineering Department, Colorado State University, Fort Collins; Thomas C. Brown; Faculty Affiliate, Colorado State University. Economist, Rocky Mountain Research Station, U. S. Forest Service, Fort Collins

14:00 **Forest Evapotranspiration During Periods Of Mild Winter Weather.**
Joan Sias, Hydrologic Research And Consulting, Seattle, WA 98145-1724

14:20 **Neighborhood Precipitation Patterns Suggest Chaos Through The Logistic Equation**
Ranjan S. Muttiah, Blackland Research & Extension Center, Texas Agricultural Experiment Station, Temple, Texas 76502

14:40 **Comparative study of the statistical features of random cascade models for spatial rainfall downscaling**
Boosik Kang, Civil Engineering Department, Colorado State University and Jorge A. Ramirez, Associate Professor, Civil Engineering Department, Colorado State University

15:00 **An Intensity - Duration - Frequency Model For Design Storms In Venezuela**
Edilberto Guevara, and Humberto Cartaya, Civil Engineering, Universidad De Carabobo, Valencia, Venezuela

15:20 Three-minute Poster presentations

15:50 Poster Session

Experiences With Back-Propagation Neural Networks (BPN)
Chongjin Fu, Civil Engineering Dept. Colorado State University

A Multi - Level Approach To Flood Frequency Regionalization
Carlo De Michele And Renzo Rosso, DIIAR, Politecnico di Milano, Milan, Italy

Estimation Of Total Dissolved Nitrate Load In Natural Stream Flows Using An In-Stream Monitor
C. Sigleo, US Environmental Protection Agency, Newport, Oregon 97365-5260, USA, and W.E. Frick, US Environmental Protection Agency, Athens, Georgia

Method Of Sharp Diminish Of The Computer Time In The Prognosis Of River – Bed Process.
D. R. Bazarov, Tashkent Irrigation Institute, Tashkent, Uzbekistan

Solution Of Two Dimensional Navier-Stokes Equation For Analysis Of Cavity Driven Problem

Mohammad R.M. Tabatabai And Farhang Rad; Power and Water Institute of Technology, Tehran, Iran

Effect Of Ph On Metal Accumulation And Sequestration In Duckweed (*Lemna Minor*)
Anthony Johnson and Barbara McCarthy, CSU, Fort Collins, CO 80523

Determining Watershed-Scale Nutrient Inputs From Decentralized Wastewater Treatment Systems
Shiloh L. Kirkland[1], Robert L. Siegrist[2], John E. Mccray[1],Carl W. Chen[3], Laura H.Z. Weintraub[3], Robert A. Goldstein[4]; [1] Dept. of Geology and Geological Engineering, Colorado School of Mines, Golden, CO; [2] Environmental Science and Engineering Division, Colorado School of Mines; [3] Systech Engineering, Inc., San Ramon, CA; [4] Electric Power Research Institute, Palo Alto, CA

April 4, 2001

Influence Of Non Uniform Rainfall Fields On Slope Stability
Bernardo Gozzini, Laboratory for Meteorology and Environmental Modelling, Campi Bisenzio (FI) Italy; Giovanni Menduni; Department of Hydraulic, Environmental and Surveying Engineering Hydraulics, Politecnico di Milano, Milano MI Italy; Francesco Meneguzzo, Laboratory for Meteorology and Environmental Modelling, Campi Bisenzio (FI) Italy; Renzo Rosso Department of Hydraulic, Environmental and Surveying Engineering Hydraulics, Politecnico di Milano, Milano MI Italy; Maria Cristina Rulli, Department of Hydraulic, Environmental and Surveying Engineering Hydraulics, Politecnico di Milano, Milano MI Italy

Computing The Yield From An Infinite Reservoir
Nilson Campos, Ticiana Studart and Ney Gomes Ibiapina Department Of Water Resources And Environmental Engineering, Universidade Federal Do Ceará, Fortaleza, Ceará, Brazil

On the evaluation of sediment yield on burned areas through hydrologic distributed model
M. C. Rulli, M. Morando, G. Menduni, R.Rosso; Department of Hydraulic, Environmental and Surveying Engineering Hydraulics, Politecnico di Milano Piazza Leonardo da Vinci, 32 I-20133 Milano MI Italy; cristina.rulli@polimi.it

Examples Of Low Cost Single-Well Tracer Tests
Craig E. Divine, Arcadis Geraghty & Miller, Inc., Highlands Ranch, Colorado,and Greg Johnson, Earth Resources Department, Colorado State University, Fort Collins, Colorado

The Bernoulli equation and compressible flow theories
Walter E. Frick; US Environmental Protection Agency, 960 College Station Rd, Athens, GA30605-2700

Climate Change Scenarios In The Upper Colorado River Basin
Arlie Huffman, Department Of Earth Resources, Colorado State University; Kelly Elder, National Forest Service, U. S. Department Of Agriculture; Kathleen Miller, National Center For Atmospheric Research

17:20 **Adjourn**

April 5, 2001 08:00 **Registration**

08:15 **SOUTH PLATTE RIVER MODELING SESSION**
Cherokee Park Room
Session Chair: Professor Luis Garcia

08:15 **South Platte Decision Support System Feasibility Study Goals And Objectives**
Ray R. Bennett, Colorado Division Of Water Resources and Randy D. Seaholm, Colorado Water Conservation Board

08:40 **South Platte Mapping And Analysis Program (SPMAP)**
Luis A. Garcia, Integrated Decision Support Group (IDS), Colorado State University

09:05 **Denver Water South Platte Modeling**
Steve Schmitzer, Denver Water

09:30 **Modsim Network Flow Modeling Of Instream Flow Requirements In The Multistate Platte River Basin**
Jin-Hee Lee, Timothy K. Gates, And John W. Labadie. Civil Engineering Department, Colorado State University, Fort Collins, CO

09:55 **South Platte EIS Model**
Lee Rozakis; Hydrosphere Resource Consultants, Inc., Boulder, CO

10:20 **Mid-morning break**

10:40 **CLIMATE/DROUGHTS/MANAGEMENT**
Cherokee Park Room
Session Chair: Professor John Stednick

10:40 **A Review Of The 2000 Water Year In Colorado**
Nolan J. Doesken And Michael A. Gillespie

11:00 **Low Flow And Drought Hydrology: Research And Management Needs**
Neil S. Grigg, Professor, Department Of Civil Engineering, Colorado State University, Fort Collins CO 80523

11:20 **Managing Colorado's Forests For Water Yield And Water Quality: Opportunities, Risks, And Constraints**
L H MacDonald (Dept. Of Earth Resources, Colorado State University, Fort Collins, CO; J D Stednick, E Huffman (Dept. Of Earth Resources) And C A Troendle (Matcom, Fort Collins, Co)

11:40 **Characterization And Quantification Of Historic Gunnison River Streamflows And Potential Applications In Regulated River System Management**
Margaret Matter, Civil Engineering Department, CSU, Fort Collins, CO

12:00 **Lunch**

13:20 **WATER QUALITY/NITROGEN**

Cherokee Park Room

Session Chair: Professor Jim Loftis

13:20 **The Clean Water Act, Federal Courts, TMDLs, and BASINS**
Russell Kinerson, Ph.D., U. S. Environmental Protection Agency, Standards and Health Protection Division

13:40 **Assessing Effects Of Reservoir Operations On The Reservoir Ecosystem Using Food Web-Energy Transfer And Water Quality Models**
Laurel Saito, Civil Engineering Department, Colorado State University; Brett Johnson[2], Fishery And Wildlife Biology Department, Colorado State University; John Bartholow[3], United States Geological Survey, Midcontinent Ecological Science Center; And Blair Hanna, Johnson Controls World Services, Inc.

14:00 **Simulation Of Increased N Deposition To Small Mountain Lakes, Snowy Range, Wyoming.**
Koren Nydick[1], Brenda Moraska[1], Jill Baron[1,2], And Brett Johnson[1]
[1]Colorado State University, [2]U.S. Geological Survey

14:20 **The Role Of Talus Slope Microbial Activity On The Flux Of Nitrate To Surface Waters**
Kate Muldoon, Graduate Degree Program In Ecology, CSU.

14:40 **The Solubility Of Manganese And Coincident Release Of Metals Based On The Reduction Of Alamosa River Basin Soils, Colorado**
Colleen H. Green, Department Of Soil And Crop Sciences, Colorado State University, Fort Collins, CO

15:00 **Detecting Change In Paired Watersheds--Water Quality Impacts From Prescribed Fire**
Robert Lange, Earth Resources, Colorado State University, Fort Collins, CO, Jim Loftis, Civil Engineering, Colorado State University, Fort Collins, CO; and Lee Macdonald, Earth Resources, Colorado State University, Fort Collins, CO

15:20 **Water Quality Monitoring System Effectiveness: Denver Water Case Study**
Justin Twenter, Colorado State University, Civil Engineering Department

15:40 **End of Conference**