AGENDA

Monday, August 27 – Trinity Beverage Company

7:00 – 9:00 pm  PRE-REGISTRATION – Join your colleagues for an informal gathering and early registration.

Tuesday, August 28 – Best Western Hilltop House

8:00 – 8:30  REGISTRATION  Sign in; pay registration fee; distribute agenda, abstracts, name tags, and local maps; sign-up for Wednesday banquet

8:30 – 8:40  WELCOME

8:40 – 9:10  INTRODUCTION  Hydrogeology of the Los Alamos area – Dave Broxton

TECHNICAL PRESENTATIONS

Unsaturated Zone Characterization – Rick Healy, presider

9:10 – 9:30  Joel Hubbell  Quantifying Deep Vadose Zone Moisture Changes at a Waste Disposal Site

9:30 – 9:50  David Bedford  Spatial Patterns of Soil Properties: Effects of Vegetation and Land Forms


10:10 – 10:30  Robert Holt  Combined Macroscopic Invasion Percolation and Continuum Modeling of Electrical Resistivity Measurements in Unsaturated Media

10:30 – 10:40  Open Discussion

10:40 – 11:00  BREAK

Model Development and Use – Rick Healy, presider

11:00 – 11:20  Richard Niswonger  A Method for Estimating Spatially-Variable Seepage and Hydraulic Conductivity in Intermittent and Ephemeral Streams


11:40 – 12:00  Jakov Pachepsky  Multimodel Simulation of Water Flow in a Field Soil Using Pedotransfer Functions

12:00 – 12:10  Open Discussion
Tuesday, August 28 -- continued

12:10 – 1:20 LUNCH

**Infiltration and Percolation** – Bill Herkelrath, presider

1:20 – 1:40 Jim Constantz The Growing Unsaturated Zone Beneath Stream Channels
1:40 – 2:00 Carlos Ochoa Water Transport Through the Vadose Zone and Shallow Groundwater Response Following Flood Irrigation
2:00 – 2:20 John Nimmo A New Method for Estimation of Fluxes during Preferential Flow
2:20 – 2:40 John Wilson Controls on Recharge to Mountain Blocks
2:40 – 3:00 Kay Birdsell Modeling Spatially Varying Net Infiltration from Canyon Bottoms
3:00 – 3:10 Open Discussion

3:10 – 3:30 BREAK

**Unsaturated Zone and Atmosphere Interactions** – Dave Stonestrom, presider

3:30 – 3:50 Dan Levitt A Distributed Water Balance Model of Evapotranspiration and Net Infiltration for Semiarid and Arid Regions
3:50 – 4:10 Brian Andraski Amargosa Desert Research Site (ADRS) — Overview and Update on Monitoring and Modeling to Improve Understanding of Contaminant-Transport Processes in Arid Environments
4:10 – 4:30 Amanda Garcia Estimating Vertical Tritium Transport from the Shallow Unsaturated Zone to the Atmosphere, Amargosa Desert Research Site, Nye County, Nevada
4:50 – 5:00 Open Discussion

Wednesday, August 29 – Fuller Lodge

8:00 – 8:10 INTRODUCTION Miscellaneous announcements

**TECHNICAL PRESENTATIONS**

**Transport - General** – John Nimmo, presider

8:10 – 8:30 Guoping Tang Model Discrimination for Nonlinear Least Square Fitting of Breakthrough Curves Using Uncertainty Analysis
8:30 – 8:50 Bin Gao Fate and Transport of Colloidal Particles in the Unsaturated Zone
8:50 – 9:10 Chittaranjan Ray Difficulties in Dealing with Unsaturated Flow and Transport in Hawaii's Deep Vadose Zones
9:10 – 9:20 Open Discussion

9:20 – 9:40 BREAK
Wednesday, August 29 -- continued

Transport – Site Specific – Ed Weeks, presider

9:40 – 10:00 Pat Longmire Aqueous Chemistry of Chromium in the Unsaturated Zone Beneath Sandia Canyon, New Mexico
10:00 – 10:20 Dave Stonestrom A Reservoir of Natural Perchlorate in Unsaturated Zones of Arid and Semi-Arid Regions, Southwestern USA
10:20 – 10:40 Chris Green Nitrogen Fluxes through Unsaturated Zones in Five Agricultural Settings across the United States
11:00 – 11:20 Bill Herkelrath Solute Transport from the Unsaturated Zone to Ground Water at the USGS Bemidji, Minnesota Crude-Oil Spill Site
11:20 – 11:30 Open Discussion
11:30 – 1:00 LUNCH
1:00 – 2:00 UZIG – NEWS, UPDATES, AND PLANS
2:00 – 2:30 BREAK
2:30 – 5:30 POSTER PRESENTATIONS

Unsaturated Zone Characterization
Todd Caldwell Soil Development and Hydrology of an Arid Soil Chronosequence in the Sonoran Desert
Eric McDonald Hydraulic Properties of a Desert Soil Chronosequence in the Mojave Desert, USA
Kim Perkins Property-Transfer Modeling to Estimate Unsaturated Hydraulic Conductivity of Deep Sediments at the Idaho National Laboratory, Idaho
Rosangela Sviercoski Analytical Upscaling of Nonlinear Darcy’s Law for Block Permeability Inclusion
Ed Perfect Measurement of Relative Permeability using the Transient Flow Centrifuge Method

Model Development and Use
Rafael Muñoz-Carpena An Improved Infiltration and Redistribution Simulation Method for Uneven Multistorm Precipitation Time Series
Ed Kwicklis Multiphase, Multicomponent Parameter Estimation for Liquid and Vapor Fluxes in Deep Arid Systems Using Hydrologic Data and Natural Environmental Tracers
Andy O'Reilly Simulation of Transient Ground-Water Recharge in Deep Water-Table Settings: A simple Water-Balance/Transfer-Function Model
Wednesday, August 29 -- continued

Infiltration and Percolation
Maria Caputo  Evaluation of Vertical Flow in Fractured and Karstic Subsoil of Altamura (Southern Italy) Using Field Infiltrometer Measurements.
Cynthia Dinwiddie  Sensors and Monitoring Techniques for the Deep Unsaturated Zone: Reducing Uncertainty Related to Seepage and Transport in Fractured Rock
Sarah Falk  Estimation and Spatial Distribution of Recharge to the Southern High Plains Aquifer, in and near Cannon Air Force Base, Curry County, New Mexico, 2004
John Nimmo  Hydraulic Properties of Mojave Desert Soils: Field Measurements and Modeling Results
John Wilson  On The Role Of Faults In Vadose Zone Fluid Flow And Solute Transport
Michael Young  Large Weighing Lysimeters for Studying Environmental Processes in Arid Soils

Unsaturated Zone and Atmosphere Interactions
Dave Stannard  Estimation of Evapotranspiration from a Domestic Leach-Field and Surrounding Lawn Using a Combined Measurement and Modeling Approach
Kyle Blasch  Climate Induced Fluctuations of Ground-Water Inflow to Kartchner Caverns, a Karstic Environment

Transport
Phil Stauffer  The Unsaturated Zone Transport Test, Busted Butte, NV: Phase 1B Experimental Results and Model Validation.
Ed Weeks  Nitrous Oxide Production Rates from the High Plains Unsaturated Zone

5:30 – 6:00  BREAK

6:00 – 7:00  INFORMAL CARPOOLS TO BANQUET

7:00 – ?  BANQUET – Rancho de Chimayo

Thursday, August 30 – Field Trip

8:00 – 10:00  BRADBURY MUSEUM – History of LANL

10:00 – 4:30  FIELD TRIP – Archaeology, Geology, and Unsaturated Zone Studies at LANL (Prompt departure time; Approximate return time; Depart from and return to Bradbury Museum)