



AGU Chapman Conference

on

**Emerging Issues in Tropical
Ecohydrology**

Conference Conveners

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**The organizers wish to acknowledge
the generous support of:**



National Science Foundation
WHERE DISCOVERIES BEGIN

Event Schedule

Sunday, 5 June

6:00 - 7:00 P.M.
Icebreaker Reception
Salón: La Pérgola

Monday, 6 June

1:15 - 2:15 P.M.
Lunch
Salón: Tomebamba

7:30 – 9:00 P.M.
Dinner
Salón: Tomebamba

Tuesday, 7 June

1:15 - 2:15 P.M.
Lunch
Salón: La Pérgola

7:30 – 9:00 P.M.
Dinner
Salón: Tomebamba

Wednesday, 8 June

All Day Field Trip: Optional, separate registration required

Thursday, 9 June

1:15 - 2:15 P.M.
Lunch
Salón: La Pérgola

7:30 – 9:00 P.M.
Dinner
Salón: Tomebamba

Scientific Program

MONDAY, 6 JUNE

8:10 a.m.– 1:00 p.m.

Oral Session I

8:10 a.m. –8:30 a.m.

Opening Welcome Ceremony

8:30 a.m. –9:30 a.m.

Jeffrey McDonnell | Tracking raindrops in tropical catchments: Opportunities and challenges

9:30 a.m. –10:30 a.m.

Rafael S Oliveira | *Soil-plant-atmosphere interactions in a tropical montane cloud forest*

10:30 a.m. –11:00 a.m.

Break

11:00 a.m. –12:00 p.m.

Rosie Fisher | Controls over Amazonian transpiration in the Community Land Model, v5.

12:00 p.m. –1:00 p.m.

Diego A Riveros-Iregui | Coupling physical and biological processes in páramos: interactions among land cover and nutrient dynamics

5:30 p.m.– 7:30 p.m.

Monday Posters

M-01

Luitgard Schwendenmann | Using $\delta^2\text{H}$ and $\delta^{18}\text{O}$ to Identify the Effect of Land Use and Season on Water Fluxes and Soil-Plant-Water Relations in a Panamanian Lower Montane Watershed

M-02

Wen-Jie Liu | The hydrological functions of litter layer in a bench-terraced rubber monoculture plantation in SW China

R-03

K P Chun | Detecting climate controls of available plant water in tropical catchments using xylem-water isotope measurements

M-04

Ricardo Sanchez-Murillo | Stable isotope variations in a tropical ‘waterscape’

M-06

Lien De Wispelaere | Temporal and Spatial Partitioning of Water Resources in a Seasonal Dry Tropical Climate

M-07

L. Adrian Bruijnzeel | Headwater streamflow regime in the Garhwal Himalaya (India) severely disturbed after advanced forest degradation

- M-08 **Tesfaalem Ghebreyohannes Asfaha** | Peak discharge dynamics in response to vegetation cover change and variability of precipitation events in steep tropical mountain catchments: case of the western Rift Valley escarpment of Northern Ethiopia
- M-09 **Aurora Kagawa-Viviani** | Landscapes of change: A review of ecohydrology research in Hawaii
- M-10 **Fidelis Chinazor Okorie** | An Assessment of the Survivability of Livestock and other Available Agricultural Produce in Oguta Eco-system in Imo State of Nigeria
- M-11 **Alberto Gomez-Tagle Jr.** | An open-source automation unit for measuring infiltration flux and (un)saturated soil hydraulic conductivities using tension infiltrometry
- M-12 **Birhanu Kagnew Bekele Sr.** | *Mechanisms for successful biological restoration of the threatened Juniperus procera (Cupressaceae) on degraded landscape, Ethiopia.*
- M-14 **Angela Jardine** | Monoterpene ‘thermometer’ of tropical forest response to climate warming
- M-15 **Kolby Jardine** | Diurnal patterns of leaf transpiration/stomatal conductance, leaf water potential, and sap flow in the Central Amazonian: Are patterns driven by an imbalance between leaf transpiration and sap flow?
- M-18 **María Poca** | Land use changes diminish soil water storage in highland ecosystems of central Argentina
- M-22 **María Poca** | Evidence for the two water worlds hypothesis for seasonal ecosystems of central Argentinean highlands
- M-19 **Cynthia Gerlein-Safdi** | Satellite and model-based characterization of canopy dew formation in tropical forests
- M-20 **Bruno Gimenez** | Leaf Temperature and Sap Flow Dynamic Coupling in Canopy Dominant Trees in the Central Amazon
- M-21 **Matteo Detto** | From leaf to ecosystem level: controls of transpiration in seasonal tropical forests across a rainfall gradient
- M-23 **Daniel A Mercado-Bettin** | Global convergence of rainfall-streamflow regulation by natural forests

- M-24 **Suzanne Robin Jacobs** | Assessing the Influence of Land Use and Catchment Characteristics on Stream Water Chemistry in the South-West Mau, Kenya, Using Spatial Sampling and High Resolution *In-situ* Monitoring
- M-25 **Björn Weeser** | Identifying Hydrological Fluxes and Processes within the Sondu Basin, Kenya Using Automatic Measuring Stations and Crowdsourced Data
- M-26 **Chandra Prasad Ghimire** | Effects of reforestation on saturated soil hydraulic conductivity and surface runoff in upland Eastern Madagascar
- M-28 **Galo Carrillo-Rojas** | Energy-balance Based Model Accurately Reproduces the Spatial Distribution of Evapotranspiration Over the Andean Páramo
- M-29 **David Windhorst** | Land cover and climate interactions of Andean páramo ecosystems – disentangling the hydro-biogeochemical response of a mountainous headwater catchment in Southern Ecuador
- M-30 **Katherine Sinacore** | Variation in plant water use and water use efficiency of planted monocultures and mixtures: Toward proper species selection for reforestation efforts in the seasonally dry tropics
- M-31 **Cynthia Wright** | Does a forested Caatinga hold more water?
- M-32 **Giovanny Mosquera** | Insights on the Rainfall-Runoff Response Controls in two High-Elevation Tropical Ecosystems
- M-33 **Luiza Maria T Aparecido** | Photosynthetic responses to leaf surface wetness in tropical and semiarid savannah trees with varying leaf traits
- M-35 **Nathalia Correa-Carmona** | The Effect of Vegetation on the Seasonality of Precipitation in the Amazon: Preliminary Insights and Observations
- M-36 **Eydith Girleza Gil Morales** | Hydrological modeling in the Andean highlands: climate change scenarios in Chingaza páramo, Colombia
- M-37 **Fred L Ogden** | Biological Controls on Hydrological Response in Tropical Catchments
- M-38 **Jia Hu** | Is cloud height formation increasing in tropical montane cloud forests?

TUESDAY, JUNE 07

8:30 a.m.– 1:00 p.m.

Oral Session II

8:30 a.m. –9:30 a.m.

Christian Birkel | Linking tracers, water age and conceptual models to understand ecohydrological processes in humid tropical catchments

9:30 a.m. –10:30 a.m.

Kathy Steppe | Plant Sensors and Process-based Models in Tropical Ecohydrology

10:30 a.m. –11:00 a.m.

Break

11:00 a.m. –12:00 p.m.

Juan Villegas | Ecosystem disturbance and ecohydrological function: local-to-global examples of global change processes that alter ecosystem function in the tropics

12:00 p.m. –1:00 p.m.

Scott Jasechko | *Continental-scale Isotope Hydrology*

5:30 p.m.– 7:30 p.m.

Tuesday Posters

T-01

Mario Bretfeld | Sap Flow Based Transpiration Estimates in Species-Rich Secondary Forests of Different Ages in Central Panama During a Wet-Season Drought

T-02

Alberto Gomez-Tagle Jr. | Changes in surface (un)saturated soil hydraulic conductivities along a soil degradation – regeneration gradient in upland Central México

T-05

Mark S. Johnson | The Breathing of a Flooded Forest: Aquatic Metabolism Determined from Synchronous CO₂ and O₂ Dynamics Indicates Switches From Net Heterotrophy to Autotrophy and Back Over Annual Flood Cycle in the Pantanal of South America

T-06

Edison Timbe | Land-cover Impact on Hydro-chemical Metrics of a Tropical Montane Forest Catchment: a Paired Catchment Assessment between Pristine Conditions and Human Induced Pastures

T-07

Sarah Schob | Influence of Land Cover on Stream Water Chemistry in a Mountainous Headwater Catchment in Southern Ecuador

T-08

Juan Diego León | Ecohydrological and biogeochemical consequences of forest degradation in tropical montane systems: interactive effects of land use and precipitation variability

- T-09 **Gabriel Taquichiri** | Rain And Temperatures Trend Dynamics In Southern Bolivia (Tarija)
- T-10 **Z. Carter Berry** | Scaling from Whole-tree Water Use to Stand Level Transpiration- Examining Relationships between Stand Age, Tree Size, Stand Variability, and Seasons within a Complex Tropical Montane Region
- T-11 **Perrine Hamel** | A simple spatially-explicit seasonal model for valuing water provisioning (InVEST)
- T-12 **Georgianne W Moore** | A Review of Wet Tropical Forest Transpiration: Lessons Learned and a Path Forward
- T-13 **Stephen P Good** | A Mesic Maximum for Vegetation Water Use Across Biomes
- T-14 **Germain Esquivel-Hernandez** | Ecohydrological Resistance and Resilience Analysis in a Tropical Landscape Using the Budyko Framework
- T-15 **Nei K Leite** | Concentration and fluxes of dissolved carbon in an Amazonian riparian forest
- T-17 **Beverley Coghill Wemple** | Evaluating Water and Suspended Sediment Fluxes from a Headwater River in the Tropical Andes: Insights for evaluating ecosystem condition and degradation.
- T-18 **Pablo F Dávila** | Multi-tracer use to assess groundwater contamination after land-use changes
- T-19 **Raha Hakimdavar** | Evidence of longer baseflow recession times following extensive forest regeneration in Puerto Rico
- T-21 **Pedro Afonso Leite** | Land use and forest regrowth influences on soil hydraulic properties in a semi-arid environment in Brazil
- T-23 **Grazielle Sales Teodoro** | Interplay between stomatal regulation capacity, hydraulic traits and growth performance in three shrub species in a tropical montane scrubland under contrasting water availability
- T-24 **Emily Burt** | Small catchments of the Andes-Amazon: zooming in to understand the big picture

- T-25 **David G Chandler** | Effects of Tropical Forest Conversion on Hydrologic Response: Process Implications for Potable Water and Sediment Budgets in Karstic Uplands
- T-26 **Chandra Prasad Ghimire** | Realistic prediction of infiltration-excess overland flow occurrence under contrasting land cover conditions in the Nepalese Middle Hills
- T-27 **Sophie Violette** | Galapagos Islands: Integrated Water Study (GIWS). *A Trans-Disciplinary Approach to Quantify Water Resources and their Impact on Natural Ecosystems*
- T-30 **Laura Zulima Flórez Botero** | Impact of Land Use and Land Cover Changes on Surface Energy Balance of a Tropical Mountain City: A Study Case in Medellín (Colombia)
- T-31 **Gretchen R Miller** | Data for Next Generation Earth System Models: Profiles of Micrometeorological Variables in a Tropical Montane Rainforest Canopy
- T-32 **Sandra R Villamizar** | The Ecological Status of Lake and River Ecosystems of the Tropical Regions of the Americas
- T-33 **Laura De Simone Borma** | Plant Water Sources in a Tropical Forest of the Central Amazon Basin in Brazil: A Stable Isotope and Soil Physic Approach
- T-34 **Patrícia Vieira Pompeu** | Modelling the impact of climate change on the extent of cloud forest in the Brazilian Serra da Mantiqueira
- T-35 **Sarah Schmitt** | Examining Temporal Patterns of Water Cycling and Plant-Fog Interactions Across Microclimatic Zones in the Galapagos Islands
- T-36 **Georgia Destouni** | Variability and change of large-scale soil moisture in tropical catchments: data-model comparison and future change scenarios
- T-37 **Fernanda de V. Barros** | *Community Hydraulics in a Tropical Montane Cloud Forest in Southeastern Brazil*
- T-38 **Juan Villegas** | Inter-hemispheric eco-climatic connections: The role of tropical forests in connecting the American monsoons

THURSDAY, JUNE 09

8:30 a.m.– 1:00 p.m.

Oral Session III

8:30 a.m. –9:30 a.m.

L.A. (Sampurno) Bruijnzeel | Hydrological Impacts of Tropical Land Degradation, Natural Forest Regeneration and Reforestation: An Overview

9:30 a.m. –10:30 a.m.

Wouter Buytaert | Managing Tropical Andean Ecohydrology Under Environmental Change

10:30 a.m. –11:00 a.m.

Break

11:00 a.m. –12:00 p.m.

Jagdish Krishnaswamy | Ecohydrology in the Anthropocene: challenges and opportunities in India

12:00 p.m. –1:00 p.m.

Panel Discussion

5:30 p.m.– 7:30 p.m.

Thursday Posters

R-01

Andrés Felipe Zapata | SPATIAL SCALING OF THE WATER, ENERGY, AND CARBON BUDGETS ACROSS RIVER BASINS OF THE ANDESAMAZON SYSTEM

R-02

Boris F Ochoa-Tocachi | Human Impacts on the Hydrology of Tropical Andean Catchments

R-06

David D Breshears | Tropical-Temperate Ecohydrological Connectivities: Assessing Ecoclimate Teleconnections Related to Tree Die-off Events

R-08

Ruben Molina | Amazon Forests Modulate Continental Precipitation: What If We Lose Them?

R-10

Higo José Dalmagro | Ecohydrologic Functioning of *Combretum lanceolatum* Under Flooded and Dry Season Conditions in the Pantanal: an Investigation at Soil, Plant and Ecosystem Scales

R-11

Ximena Palomeque | Exploring the potential of native trees for restoration of highland ecosystem in the Andes under climate change predictions

R-13

Mauro Brum Jr. | Effects of the 2015 El-Niño extreme drought on the sapflow of trees in eastern Amazonia

- R-14 **Jun Zhang** | Contrasting headwater runoff generating mechanisms in fire-climax grassland and semi-mature secondary forest, Leyte, Philippines
- R-15 **Caroline Muller** | Susceptibility of tropical conifers to changes in the hydrologic cycle
- R-16 **Bert De Bievre** | Supporting Watershed Interventions through Participatory Monitoring in the Tropical Andes
- R-17 **Christian Dominguez** | Quantification of Cloud Water Interception in the Windward Highlands of San Cristobal Island (Galapagos)
- R-18 **Pablo Quichimbo** | Effects of human activities on hydrophysical and chemical soil properties in montane forest and páramo ecosystems in the Ecuadorian Andes
- R-19 **Brent D Newman** | Examination of the Stable Isotope Content of Precipitation in a Pan-Tropical Context: Ecohydrological Implications
- R-21 **Jaivime A Evaristo** | Ecohydrological separation in low-seasonality tropics: Evidence of absence or absence of evidence?
- R-22 **Anthony T Cahill** | Subcanopy modeling of CO₂ and H₂O fluxes in a Costa Rican tropical premontane canopy
- R-23 **Mayanín Rodríguez Morales** | EFECTO DE LA COBERTURA VEGETAL SOBRE LA RETENCIÓN DEL AGUA EN EL SUELOS DEL PÁRAMO DE MIXTEQUE
- R-24 **Trevor Nulton Browning** | LINKING SOURCE AND SINK: WATERSHED EVALUATION AND MINERALOGICAL DISTRIBUTION OF SEDIMENTS IN EASTERN ST. JOHN, US VIRGIN ISLANDS
- R-26 **Mark S Seyfried** | A Dynamic View of Plant Available Water
- R-27 **Han Tseng** | Fog immersion is a key factor linking patterns in vegetation structure and composition in tropical montane cloud forests: preliminary results of CloudNet meta-analysis
- R-28 **Thomas Dunne** | Topographic, Pedologic, and Land Cover Controls on the Generation of Hillslope Runoff and the Water Balance in Amazonian Lowlands

- R-29 **Loren Albert** | Could leaf phenology help the wet season recommence in Amazonia?
- R-30 **Mauricio Florencio Villazon** | Study of Hydrological Processes for Five Catchments in Puna and Montane Forest Ecosystems in Bolivia Using Data Mining Techniques
- R-34 **Jorge Emilio Celi** | The Hydrological Regimes of the Napo River Floodplains, Andean Amazon
- R-35 **Daniel Ruiz-Carrascal** | The Río Claro Mountain Observatory ‘Poleka Kasue’: improving our understanding of the complexity of tropical high-altitude watershed hydrology
- R-37 **Jorge L Peña-Arancibia** | Forests as ‘sponges’ and ‘pumps’: Modelling the impact of deforestation on dry season flows across the tropics

PROGRAM END