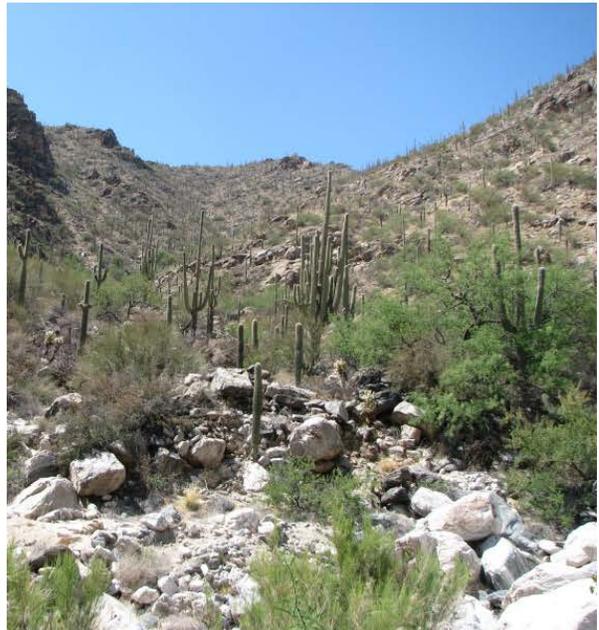




# CZO@AGU 2015

December 14-18  
San Francisco, California

 **CRITICAL ZONE OBSERVATORIES** funded by NSF  
studying the zone where rock meets life



## Agenda

Date/Time of Presentation	Location/Session Info	Presentation Title/Author(s)	Affiliation
<b>Monday, December 14, 2015</b>			
8:00 – 12:20 PM	B11F – New Insights on Nutrient Sources and Biogeochemical Processes in Surface Waters as Revealed by Advanced Techniques and In Situ Optical Sensors I Posters Moscone South – Poster Hall	B11F-0499 – Comparing Stream DOC Fluxes from Sensor- and Sample-Based Approaches SHANLEY, J.; SARACENO, J.; AULENBACH, B.; MAST, A.; CLOW, D.; HOOD, K.; WALKER, J.; MURPHY, S.; TORRES-SANCHEZ, A.; AIKEN, G.; MCDOWELL, W.;	Luquillo
8:00 – 12:20 PM	B11G – Organic Matter as an Integrated Signal of Climate and Land Use Change from Source to Sea I Posters Moscone South – Poster Hall	B11G-0508 – Erosional distribution of metal oxides and its implication for soil carbon dynamics BERHE, A.; NEWMAN, A.; HUNSAKER, C.	Sierra
8:00 – 12:20 PM	H11C – Ecohydrology in a Changing Environment I Posters Moscone South – Poster Hall	H11C-1355 – Does woodland encroachment impact water?: An ecohydrology study of western juniper ( <i>Juniperus occidentalis</i> ) and other semi-arid conifers in the western world NIEMEYER, R.J.; LINK, T.E.; HEINSE, R.; SEYFRIED, M.S.; FLERCHINGER, G.N.; KLOS, P.Z.	Reynolds Creek
8:00 – 12:20 PM	H11E – Interacting Physical and Ecological Processes across Terrestrial and Aquatic Systems I Posters Moscone South – Poster Hall	H11E-1393 - Montane meadow evapotranspiration: Implications for restoration and impacts on downstream flow	Sierra
10:20-10:35 AM	H12B – Advances in Ecohydrology of Water Stressed Environments I Moscone West – 3024	H12B-01 – Snowmelt as a driver of ecosystem response in water limited mountain forests of the Western U.S. MOLOTCH, N.P.; TRUJILLO, E.	Boulder Creek
10:50 -11:05 AM	EP12B – Innovative Isotope	EP128-03 - Boron isotopes at the Shale	Susquehanna

	Methods for Characterizing Metal Budgets in the Present and Past Terrestrial and Aquatic Environments I Moscone West – 2003	Hills Critical Zone Observatory GAILLARDET, J.; NOIREAUX, J.; SULLIVAN, P.; STEINHOEFEL, G.; LOUVAT, P. BRANTLEY, S.L.	
10:50 -11:05 AM	H12D – Ecological and Hydrological Resistance and Resilience: Emerging Understanding from Interactions and Multiple Scales I Moscone West – 3016	H12D-03 – Patterns of Hydrologic Sensitivity to Climate in the Western US: Implications for Future Predictions SAFEEQ, M.; GRANT, G.	Sierra
1:40 – 6:00 PM	B13F – Terrestrial Biome Fluxes and Biogeochemical Impacts of Forest Disturbances: Measurements and Modeling from Minutes to Millennia III Posters Moscone South – Poster Hall	B13F-0670 – Ecosystem carbon balance in a drier future: land-atmosphere exchanges of CO <sub>2</sub> , water and energy across semiarid southwestern North America BIEDERMAN, J.; SCOTT, R.; GOULDEN, M.; LITVAK, M.; KOLB, T.; YEPEZ, E.; OECHEL, W.; MEYERS, T.; PAPUGA, S.; PONCE-CAMPOS, G.; KROFCHECK, D.; MAURER, G.; DORE, S.; GARATUZA, J.; BELL, T.; KRISHNAN, P.	Sierra
1:40 – 6:00 PM	B13F – Terrestrial Biome Fluxes and Biogeochemical Impacts of Forest Disturbances: Measurements and Modeling from Minutes to Millennia III Posters Moscone South – Poster Hall	B13F-0691 – Contrasting the patterns of aspen forest and sagebrush shrubland gross ecosystem exchange in montane Idaho, USA FELLOWS, A.; FLERCHINGER, G.N.; SEYFRIED, M.S.	Reynolds Creek
1:40 – 6:00 PM	B13F – Terrestrial Biome Fluxes and Biogeochemical Impacts of Forest Disturbances: Measurements and Modeling from Minutes to Millennia III Posters Moscone South – Poster Hall	B13F-0693 – How deep does disturbance go? The long-term effects of canopy disturbance on tropical forest soil biogeochemistry GUTIÉRREZ DEL ARROYO, O.; SILVER W.	Luquillo
1:40 – 6:00 PM	B13G – The Bioatmospheric N Cycle: N Emissions, Transformations, Deposition, and Terrestrial and Aquatic Ecosystem Impacts III Posters – Moscone South -	B13G-0702 – The Paradox of High Subsurface [N <sub>2</sub> O] and Low Surface Flux of N <sub>2</sub> O to the Atmosphere WEITZMAN, J.N.; KAYE, J.P.	Susquehanna

	Poster Hall		
1:40 – 6:00 PM	B13G – The Bioatmospheric N Cycle: N Emissions, Transformations, Deposition, and Terrestrial and Aquatic Ecosystem Impacts III Posters– Moscone South - Poster Hall	B13G-0704 – Nitrogen fertilizer increases nitrous oxide, but not dinitrogen, emissions from moist tropical forest soils in Puerto Rico ALMARAZ, M.; PORDER, S.; GROFFMAN, P.	Luquillo
1:40 – 6:00 PM	H13C – Advances in Watershed Modeling of Hydrology, Sediment and Nutrients III Posters Moscone South – Poster Hall	H13C-1538 – A modified Green-Ampt model for water infiltration and preferential flow LIU, D.	Eel River
1:40 - 6:00 PM	H13C – Advances in Watershed Modeling of Hydrology, Sediment and Nutrients III Posters Moscone South – Poster Hall	H13C-1541 – Integration of a Physically based Distributed Hydrological Model with a Model of Carbon and Nitrogen Cycling: A Case Study at the Luquillo Critical Zone Observatory, Puerto Rico BASTOLA, S.; DIALYNAS, Y.; BRAS, R.; NOTO, L.	Luquillo
1:40 - 6:00 PM	H13K – Understanding Hydrogeophysical States and Fluxes: Connecting Point Scale Information with Remote Sensing Posters Moscone South – Poster Hall	H13K-1728 – Validation of the Soil Moisture Active Passive mission using USDA-ARS experimental watersheds COSH, M.H.; JACKSON, T.J.; BINDLISH, R.; COLLIANDER, A.; KIM, S.; DAS, N.N.; YUEH, S.H.; BOSCH, D.D.; GOODRICH, D.C.; PRUEGER, J.H.; STARKS, P.J.; LIVINGSTON, S.; SEYFRIED, M.S.; COOPERSMITH, E.J.	Reynolds Creek
2:25 - 2:40 PM	B13J – Organic Matter as an Integrated Signal of Climate and Land Use Change from Source to Sea II Moscone West - 2006	B13J-04 – Seasonal variation and processing of vascular plant organic matter in tropical montane catchments as reflected by riverine DOC compositions HERNES, P.; DYDA, R.; MCDOWELL, W.	Luquillo
3:10 – 3:25 PM	H13Q – Precipitation-Vegetation Interactions: Advances in Interception Loss, Throughfall, and Stemflow Research II Moscone West - 3022	H13Q-07– Examining the impacts of Wildfire on Throughfall and Stemflow Chemistry and Flux at Plot and Catchment Scales WHITE, A.M.; SWETNAM, T.; MCINTOSH, J.; MEIXNER, T.; BROOKS, P.D.; CHOROVER, J.	Catalina-Jemez

**Tuesday, December 15, 2015**

8:00 – 12:20 PM	B23C – Microbial Controls of Biogeochemical Cycling Moscone South – Poster Hall	B23C-0614 – Effects of temperature on microbial transformation of organic matter – comparing stories told by purified enzyme assays, chemostat experiments and soils LEHMEIER, C.; MIN, K.; GOOD, H.; BILLINGS, S.	Calhoun
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1379 – Concentration-Discharge Relationships of Al, Transition, Metals, and Rare Earth Elements in the Santa Catalina Mountains-Jemez River Basin Critical Zone Observatory REDFIELD, S.; CHOROVER, J.; TROSTLE, K.	Catalina-Jemez
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1380 – Soil Inorganic Carbon Thresholds and Formation: What are the Controls in a Transitional, Semi-Arid Watershed? STANBERY, C.; WILL, R.M.; BENNER, S.G.; SEYFRIED, M.S.; LOHSE, K.A., LYTLE, M.L.; WEPPNER, K.; FLORES, A.N.; SMITH, A.; GOOD, A.; THORNTON, C.; LEWIS, H.; BRUCK, B.; HUQ, O.; WALLACE, S.; COOK, M.; BLACK, C.; PIERCE, J.L.	Reynolds Creek
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1381 – Determining Total Soil Carbon Storage in the Critical Zone Using Topography and Lithology PATTON, N.R.; LOHSE, K.; SEYFRIED, M.S.; CROSBY, B.T.; GODSEY, S.	Reynolds Creek
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1382 – Topographic Control of Aboveground Carbon Pools Across an Environmental Gradient, Eastern Slope of the Rock Mountains, Colorado SWETNAM, T.L.; BROOKS, P.D.; GALLO, E.L.; BARNARD, H.R.; HARPOLD, A.A.	Catalina-Jemez / Boulder Creek
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1383 – The Activity of Deep roots in bedrock fractures at the Susquehanna Shale Hills Critical Zone Observatory, USA HASENMUELLER, E.A.; WEITZMAN, J.N.; ADAMS, T.S.; STINCHCOMB, G.E.; EISSENSTAT, D.; BRANTLEY, S.L. KAYE, J.P.	Susquehanna
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1385 – Water and Carbon Fluxes Along An Elevation/Precipitation Gradient in a Sagebrush Steppe	Reynolds Creek

		Environment FLERCHINGER, G.N.; FELLOWS, A.; SEYFRIED, M.S.	
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1387 – The tree water isocape of a central Pennsylvania catchment: eco-hydraulic patterns and processes GAINES, K.; BRUBAKER, K.M.	Susquehanna
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1389 – Diurnal and Seasonal Variation in Sap Flow Among Different Sagebrush Species and Subspecies Along an Elevation Gradient in a Semi- Arid Ecosystem SHARMA, H.; REINHARDT, K.; LOHSE, K.A.	Reynolds Creek
8:00 – 12:20 PM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1390 – Variation in Montane Forest Transpiration Dormancy and Seasonality Along an Elevation Gradient BARNARD, D.; BARNARD, H.; MOLOTCH, N.	Boulder Creek
8:00 – 12:20 PM	H21F – Hydrochronology: Advances in Tracer Methods, Modeling Techniques, and Applications of Residence Times in Hydrology Research I Posters Moscone West - 3020	H21F-1439 – Variability of Residence Time Tracer Concentrations at the Southern Sierra Critical Zone Observatory during the California Drought VISSER, A.; THAW, M.; STACY, E.; HUNSAKER, C.; BIBBY, R.; DEINHART, A.L.; SCHORZMAN, K.; EGNATUK, C.; CONKLIN, M.; ESSER, B.	Sierra
8:45 - 9:00 AM	H21C – Ecohydrology in the Critical Zone I Posters Moscone South – Poster Hall	H21C-1394 – Comparative Spatial and Temporal Analysis of Particle Composition through the Critical Zone in the Investigation of Groundwater and Stream Chemistry NGHIEM, A.; KIM, H.; BOURNE, H.; THURNHOFFER, B.M.; BISHOP, J.K.	Eel River
10:20 -10:35 AM	B22D – Microbial Controls of Biogeochemical Cycling II Moscone West - 2008	B22D-01 – The Median Isn't the Message: Elucidating Nutrient Hot Spots and Hot Moments in a Sierra Nevada Forest Soil HART, S.; BARNES, M.; JOHNSON, D.; MEADOWS, M.	Sierra
11:35 -11:50 AM	GC22A – Advances in Atmosphere and Land Modeling for Improved Understanding of the Hydrologic Cycle at the Watershed Scale I Moscone West - 3020	GC22A-06 – Development of a hybrid 3- D hydrological model to simulate hillslopes and the regional unconfined aquifer system in Earth Systems models HAZENBERG, P.; BROXTON, P.D.; BRUNKE, M.; GOCHIS, D.; NIU, G.-Y.;	Catalina- Jemez

		PELLETIER, J.D.; TROCH, P.A.; ZENG, X.	
11:58 - 12:20 PM	B22C – Global Forest Dynamics and Interactions with a Changing Climate I Moscone West – 2010	B22C-06 – Underestimation of Global Vulnerability to Tree Mortality and Forest Die-Off from Hotter Drought in the Anthropocene – A Synthesis of Contrasting Evidence and Perspectives ALLEN, C.; BRESHEARS, D.; MCDOWELL, N.; LLORET, F.	Catalina-Jemez
12:00 - 12:15 PM	NG22A – Hydrologic Dynamics and Analytics: Physical and Data-Based Approaches toward Improving Hydrologic Understanding and Prediction I Moscone South – 300	NG22A-07 - Inference of Soil Hydrologic Parameters from Soil Moisture Monitoring Records CHANDLER, D.G.; SEYFRIED, M.S.; MCNAMARA, J.P.; HWANG, K.	Reynolds Creek
1:40 – 1:55 PM	H23J – Ecohydrology in the Critical Zone II Moscone West – 3020	H23J-01 - Complex terrain in the Critical Zone: How topography drives ecohydrological patterns of soil and plant carbon exchange in a semiarid mountainous system BARRON-GAFFORD, G.; MINOR, R.L.; HEARD, M.M.; SUTTER, L.F.; YANG, J.; POTTS, D.L.	Catalina-Jemez
1:40 - 6:00 PM	A23C – Long-Range Transport of Dust and Pollution in Past, Present, and Future III Posters Moscone South – Poster Hall	A23C-0329 – The Role of African Dust Particles on Cloud Chemistry and Microphysics in a Tropical Montane Cloud Forest in the Caribbean TORRES-DELGADO, E.; VALLE-DIAZ, C.; BAUMGARDNER, D.; MCDOWELL, W.; GONZALEZ, G.; MAYOL-BRACERO, O.	Luquillo
1:40 - 6:00 PM	B23C – Microbial Controls of Biogeochemical Cycling III Posters Moscone South – Poster Hall	B23C-0626 – Soil Microbial Nitrogen Cycling Responses to Wildfire in a High Elevation Forested Catchment in Jemez Mountains, NM MURPHY, M.A.; FAIRBANKS, D.; CHOVOVER, J.; RICH, V.I.; GALLERY, R.E.	Catalina-Jemez
1:40 - 6:00 PM	B23C – Microbial Controls of Biogeochemical Cycling III Posters Moscone South – Poster Hall	B23C-0627 – Effects of redox fluctuations on microbial community ecology post-wildfire in a high elevation mixed-conifer catchment in northern New Mexico FAIRBANKS, D.; GREEN, K.; MURPHY, M.A.; SHEPARD, C.; CHOROVER, J.; RICH, V.I.; GALLERY, R.E.	Catalina-Jemez
1:40 - 6:00 PM	EP23C – Mountain Building, Denudation, and the Global Evolution of Biogeochemical	EP23C-0987 – Influence of Soil Erosion and Landslide Occurrence on Soil Organic Carbon Storage and Loss in the	Luquillo

	Cycles II Posters Moscone South – Poster Hall	Luquillo Critical Zone Observatory, Puerto Rico DIALYNAS, Y.; BASTOLA, S.; BRAS, R.; MARIN-SPIOTTA, E.; SILVER, W.; ARNONE, E.; NOTO, L.	
1:40 - 6:00 PM	GC23A – Advances in Atmosphere and Land Modeling for Improved Understanding of the Hydrologic Cycle at the Watershed Scale II Posters Moscone South – Poster Hall	GC23A-1126 – Application of a new hydraulic conductivity model to simulate rapid groundwater fluctuations in the Eel River watershed in Northern California VRETTAS, M.D.; FUNG, I.Y.	Eel River
1:40 - 6:00 PM	H23E – Intercomparison Studies of Hydrological Models. Beyond Comparing Streamflows, Snow Water Equivalent, and Evapotranspiration Posters Moscone South – Poster Hall	H23E-1620 – A Controlled Approach to Model Comparison and Improvement: Insights from the Reynolds Creek Critical Zone Observatory CLARK, M.P.	Reynolds Creek
1:40 - 6:00 PM	H23E – Intercomparison Studies of Hydrological Models. Beyond Comparing Streamflows, Snow Water Equivalent, and Evapotranspiration Posters Moscone South – Poster Hall	H23E-1624 – Comparison of Two Conceptually Different Physically-based Hydrological Models – Looking Beyond Streamflows ROUSSEAU, A.N.; ALVAREZ, A.P.; YU, X.; SAVARY, S.; DUFFY, C.	Susquehanna
1:40 - 6:00 PM	Stream Temperature: Potential Climate Change Adaptation in an Integrated Landscape Context II Posters Moscone South – Poster Hall	H23H-1673 – Two Dimensional Modeling of the Extent and Stability of Cold Water Refugia at the Confluences of the South Fork of the Eel River GREER, G.; THOMPSON, S.E.;	Eel River
1:40 - 6:00 PM	PA23B – Nature and Humans, Economics and Law, Micromotivators and Macrobehaviors, the Anthropocene and the Technosphere: How are We Doing at Putting It All Together? Poster Moscone South – Poster Hall	PA23B-2192. Adopt to sustain: The effect of biophysical and socioeconomic context on the ability of two contrasting U.S. agroecosystems to respond to changes. PAPANICOLAOU, A.N.; WILSON, C.G.; ANDSAGER, J.; BENNETT, D.A.; CLARK, C.D.; LAMBERT, D.M.; de la TORRE UGARTE, D.G.; PETERS, D.J.; WALKER, F.R.; DALE, V.	IML
1:55 – 2:10 PM	H23J - Ecohydrology in the Critical Zone II Moscone West – 3020	H23J-02 – Influence of Topography on Root Processes in the Shale Hills- Susquehanna Critical Zone Observatory EISSENSTAT, D.; ORR, A.S.; ADAMS, T.S.; CHEN, W.; GAINES, M K.	Susquehanna

2:10 – 2:25 PM	H23J- Ecohydrology in the Critical Zone II Moscone West – 3020	H23J-03 – Drainage from the critical zone: lithologic, aspect, and vegetation controls on the spatial extent of wetted channels during the summer dry seasons LOVILL, S.; DIETRICH, W.E.; HAHM, W.J.	Eel River
2:25 – 2:40 PM	EP23E – Sources, Transport Processes, and Deposition/ Storage of Fine-Grained and Cohesive Sediment: From Hillslopes to Oceans II Moscone West - 2005	EP23E-04 – Sediment Fingerprinting in Intensively Managed Landscapes: Application of an Enhanced Bayesian Un-mixing Framework that accounts for Spatiotemporal Heterogeneity to Study Intra-Seasonal Trends in Source Contributions ABBAN, B.K.; PAPANICOLAOU, A.N.; WILSON, C.G.; ABACI, O.; WACHA, K.M.; SCHNOEBELEN, D.J.; THOADS, B.L.; YU, M.	IML
2:40 – 2:55 PM	H23J – Ecohydrology in the Critical Zone II Moscone West – 3020	H23J-05 – Scale-dependent interactions between vegetation, landscape, and climate: How critical zone structure influences ecohydrological resilience in a rapidly changing world BROOKS, P.; BARNARD, H.; CHOROVER, J.; FAN, Y.; GALLO, E.; GODSEY, S.; MAXWELL, R.; MCNAMARA, J.; SWETNAM, Y.; TAGUE, N.	Catalina-Jemez / Boulder Creek / and Reynolds
2:55 – 3:10 PM	H23J – Ecohydrology in the Critical Zone II Moscone West – 3020	H23J-06 – The roles of trees in the Critical Zone DAWSON, T.	Eel River
6:15 – 7:15 PM	TH25D - A Townhall for the Network of Critical Zone Observatory Moscone West – 2010	TH25D – A Townhall for the Network of Critical Zone Observatory WHITE, T.S.; BRANTLEY, S.L.; RICHTER, D., Jr.; DERRY, L.A.; BANWART, S.A.	Susquehanna
<b>Wednesday, December 16, 2015</b>			
8:00 - 12:20 PM	EP31A - International Critical Zone Research: Status, Networking, and Challenges Posters Moscone South – Poster Hall	EP31A-0980 – Towards an International Network of Critical Zone Observatories LI, H.	Susquehanna
8:00 - 12:20 PM	EP31A - International Critical Zone Research: Status, Networking, and Challenges Posters Moscone South – Poster Hall	EP31A-0981 - International Critical Zone Science: Opportunities to Build a Global Understanding of Land-Water Linkages MCDOWELL, W.	Luquillo

8:00 - 12:20 PM	EP31A - International Critical Zone Research: Status, Networking, and Challenges Posters Moscone South – Poster Hall	EP31A-0983 - Promoting US-China Critical Zone Science Collaboration and Coordination Through Established Subnational Bilateral Science Partnerships: The US-China EcoPartnership for Economic and Environmental Sustainability FILLEEY, T.; GUO, D.; PLANTE, A.	Luquillo
8:00 - 12:20 PM	EP31A - International Critical Zone Research: Status, Networking, and Challenges Posters Moscone South – Poster Hall	EP31A-0985 – Tools and perspectives for a unified approach to understanding microbial ecology in the critical zone GALLERY, R.E.; ARONSON, E.L.; FAIRBANKS, D.; MURPHY, M.A.; RICH, V.I.; HART, S.C.	Catalina-Jemez / Sierra
8:00 - 12:20 PM	EP31A - International Critical Zone Research: Status, Networking, and Challenges Posters Moscone South – Poster Hall	EP31A-0987 – CZO perspective in Central Africa: The Lopé watershed, Lopé National Park, Ogooué River basin, Gabon BRAUN, J.-J.; JEFFERY, K.; PAMBO, A.F.K.; PAIZ, M.-C.; RICHTER, D.; POULSEN, J.; GAILLARDET, J.	Calhoun
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	EP31B-0994 – Climatic Controls on Soil and Deep Regolith Development in Southern Sierra CZO TIAN, Z.; O’GEEN, A.; HARTSOUGH, P.; DENG, J.	Sierra
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	E31B-0995 – Spatial Patterns between Regolith Thickness and Forest Productivity in the Southern Sierra CZO FERRELL, R.; FERRELL, P. HARTSOUGH, P.; O’GEEN, A.	Sierra
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	EP31B-1003 – River Suspended Sediment and Particulate Organic Carbon Transport in Two Montane Catchments in the Luquillo Critical Zone Observatory of Puerto Rico over 25 years: 1989 to 2014 CLARK, K.; PLANTE, A.; WILLENBRING, J.; JEROLMACK, D.; GONZALEZ, G.; STALLARD, R.; MURPHY, S.; VANN, D.; LEON, M.; MCDOWELL, W.	Luquillo
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	EP31B-1004 – Generating Porosity in the Critical Zone: Does Volumetric Strain Dominate Chemical Mass Loss? HAYES, J.; RIEBE, C.; HOLBROOK, S.;	Sierra

		HARTSOUGH, P.	
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	EP31B-1005 – Ordering Interfluves: a Simple Proposal for Understanding Critical Zone Evolution and Function BRECHEISEN, Z.; RICHTER, D.; MOON, S.; HALPIN, P.	Calhoun
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	EP31B-1006 – Geophysical investigation of differences in weathering depths between the north and south facing slopes of a small catchment in the Reynolds Creek Critical Zone Observatory NIELSON, T.; BRADFORD, J.H.; HOLBROOK, W.S.	Reynolds Creek
8:00 - 12:20 PM	EP31B – Landscape Evolution from a Critical Zone Science Perspective I Posters Moscone South – Poster Hall	EP31B-1009 – Probabilistic modeling of soil development variability with time SHEPARD, C.; SCHAAP, M.G.; RASMUSSEN, C.	Catalina-Jemez
8:00 – 12:20 PM	H31D – Disturbance Hydrology: Assessing the Impacts of Abrupt Landscape Changes on Watershed Hydrology I Posters Moscone South – Poster Hall	H31D-1447 – Source Water Flow Pathways in Forested Mountain, Headwater Streams: A Link Between Sediment Movement Patterns and Stream Water Chemistry MARTIN, S.; CONKLIN, M.; LIU, F.	Sierra
8:00 – 12:20 PM	H31H – The Hydrology-Vegetation-Climate Nexus: Identifying Process Interactions and Environmental Shifts in Mountain Catchments I Posters Moscone South – Poster Hall	H31H-1525 – Early snowmelt decreases ablation period carbon uptake in a high elevation, subalpine forest, Niwot Ridge, Colorado, USA WINCHELL, T.; MOLOTCH, N.; BARNARD, D.	Boulder Creek
8:00 – 12:20 PM	IN31C – Scalable and adaptable architecture for earth science cyberinfrastructure Poster Moscone South – Poster Hall	IN31C-1775 – A smart modeling framework for integrating BMI – enabled models as web services JIANG, P.; ELAG, M.; KUMAR, P., PECKHAM, S.; LIU, R.; MARINI, L.; HSU, L.	IML
8:00 – 12:20 PM	NG31A – Hydrologic Dynamics and Analytics: Physical and Data-Based approaches toward improving hydrologic understanding and Prediction II Posters Moscone South – Poster Hall	NG31A-1833 – A network approach to determine ecosystem vulnerability to extremes GOODWELL, A.; KUMAR, P.	IML

8:00 – 12:20 PM	NG31A – Hydrologic Dynamics and Analytics: Physical and Data-Based approaches toward improving hydrologic understanding and Prediction II Posters Moscone South – Poster Hall	NG31A-1841 – Optimal groundwater and soil moisture sensor placement for estimation of event streamflow KRAPU, C.; KUMAR, M.	Calhoun
1:40 - 6:00 PM	A33H – Fog: Atmosphere, Biosphere, Land, and Ocean Interactions I Posters Moscone South - Poster Hall	A33H-0278 – Quantifying Amount and Variability of Cloud Water Inputs Using Active-Strand Collector, Ceilometer, Dewpoint, and Photographic Measurements SCHOLL, M.; BASSIOUNI, M.; MURPHY, S.; GONZALEZ, G.; VAN BEUSEKOM, A.; TORRES-SANCHEZ, A.	Luquillo
1:40 - 6:00 PM	A33H – Fog: Atmosphere, Biosphere, Land, and Ocean Interactions I Posters Moscone South - Poster Hall	A33H-0276 – A Local Index of Cloud Immersion in Tropical Forests Using Time-Lapse Photography BASSIOUNI, M.; SCHOLL, M.	Luquillo
1:40 – 6:00 PM	A33L - Mineral Dust Aerosols: From Small-Scale Insights to Large-Scale Understanding III Posters Moscone South - Poster Hall	A33L-0377 - African Dust Concentrations in the Caribbean Island of Puerto Rico MAYOL-BRACERO, O.; MORALES-GARCIA, F.; SANTOS-FIGUEROA, G.; CUSTALS, L.; IZAQUIRRE, M.; PROSPERO, J.	Luquillo
1:40 – 6:00 PM	B33D – Soil Organic Matter: Mechanisms of Stabilization and Change II Posters Moscone South – Poster Hall	B33D-0733 – Soil Organic Matter Characterization by <sup>13</sup> C-NMR and Thermal Analysis in Deep Tropical Soil Profiles from the Luquillo Critical Zone Observatory PLANTE, A.; HOCKADAY, W.	Luquillo
1:40 – 6:00 PM	B33D – Soil Organic Matter: Mechanisms of Stabilization and Change II Posters Moscone South – Poster Hall	B33D-0728 - Differences in the Temperature Sensitivity of Soil Organic Carbon Decomposition in a Semi-Arid Ecosystem across an Elevational Gradient DELVINNE, H.; FLORES, A.N.; BENNER, S.G.; FERIS, K.P.; DE GRAAFF, M-A.	Reynolds Creek
1:40 – 6:00 PM	B33D – Soil Organic Matter:	B33D-0746 – Can $\delta^2\text{H}$ of Organic Matter	Sierra

	Mechanisms of Stabilization and Change II Posters Moscone South – Poster Hall	in Soils be Used for Understanding Organic Matter Sources and Cycling? FOGEL, M.; BERHE, A.; WILLIAMS, E.	
1:40 - 6:00 PM	B33D – Soil Organic Matter: Mechanisms of Stabilization and Change II Posters Moscone South – Poster Hall	B33D-0749 – Hill Slope and Erosional controls on soil organic geochemistry in intensely managed landscapes HOU, T.; FILLEY, T.R.; HUGHES, M.; TONG, Y.; PAPANICOLAOU, AN.N.; WACHA, K.M.; ABAN, B.K.; BOYS, J.F.; WILSON, C.G.	IML
1:40 - 6:00 PM	C33A – Improved Understanding and Prediction of Mountain Hydrology through Alpine Research Catchments I Posters Moscone South – Poster Hall	C33A-0794 – Cascading Impacts of Longwave Radiation Uncertainty on Modeled Snowmelt and Summer Evapotranspiration at Mountain Research Sites RALEIGH, M.S.; LAPO, K.E.; MARKS, D.G.; HEDRICK, A.R.; FLERCHINGER, G.N.; CLARK, M.P.	Reynolds Creek
1:40 - 6:00 PM	C33D – Recent Advances in Monitoring, Measuring, and Modeling Snow and Cryospheric Processes for the Detection and Diagnosis of Change I Posters Moscone South – Poster Hall	C33D-0845 – A hydrometeorological dataset across the rain-to-snow transition at Reynolds Creek Critical Zone Observatory, Idaho KUMAR, M.; CHEN, X.; WINSTRAL, A.H.; WANG, R.; MARKS, D.G.	Reynolds Creek
1:40 - 6:00 PM	C33D – Recent Advances in Monitoring, Measuring, and Modeling Snow and Cryospheric Processes for the Detection and Diagnosis of Change I Posters Moscone South – Poster Hall	C33D-0855 – Understanding the variations in the timing of daily streamflow peak during melt season MARKS, D.G.; WHEATER, H.S.; DEBEER, C.M.; KORMOS, P.R.	Reynolds Creek
1:40 - 6:00 PM	GC33E – The Role of Fire in the Earth System: Understanding Drivers, Feedbacks, and Interactions with the Land, Atmosphere, and Society I Posters Moscone South – Poster Hall	GC33E-1353 – An Integrated Model for Identifying Linkages Between the Management of Fuel Treatments, Fire and Ecosystem Services BART, R.; ANDERSON, S.; MORITZ, M.; PLANTINGA, A.; TAGUE, C.	Sierra
1:40 - 6:00 PM	GC33E – The Role of Fire in the Earth System: Understanding Drivers, Feedbacks, and Interactions with the Land, Atmosphere, and Society I Posters	GC33E-1356 – Short Term Soil Respiration Response to Fire in a Semi-arid Ecosystem ROZIN, A.	Reynolds Creek

	Mosccone South – Poster Hall		
1:40 - 6:00 PM	NH33B – Hydro meteorological and Geophysical Hazards and Disasters in Developing Countries: Risk Perception, Management, and Adaptation II Posters Mosccone South – Poster Hall	NH33B-1914 – Human uses of forested watersheds and riparian corridors: hazard mitigation as an ecosystem service with examples from Panama, Puerto Rico, and Venezuela LARSEN, M.	Luquillo
1:55 – 2:10 PM	EP33D – Landscape Evolution from a Critical Zone Science Perspective II Mosccone West - 2003	EP33D-02 – Three-dimensional topographic stress controls on bedrock fractures and landscape evolution MOON, S.; PERRON, J.T.; MARTEL, S.; HOLBROOK, W.S.; ST.CLAIR, J.; SINGHA K.	Boulder Creek
1:55 – 2:10 PM	H330 – Water Resources management and policy in a changing world I Oral Mosccone West - 3002	H330-02 – Climate and humans as amplifiers of hydro-ecologic change: science and policy implications for intensively managed landscapes FOUFOULA-GEORGIOU, E.; CZUBA, J.; BELMONT, P.; WILCOCK, P.; GRAN, K.; KUMAR, P.	IML
2:10 – 2:25 PM	EP33D – Landscape Evolution from a Critical Zone Science Perspective II Mosccone West – 2003	EP33D-03 – Weathering, Fractures, and Water in the deep Critical Zone: Geophysical Investigations in the U.S. Critical Zone Observatories HOLBROOK, W.S.	Eel River – Reynolds Creek
2:25 – 2:40 PM	EP33D – Landscape Evolution from a Critical Zone Science Perspective II Mosccone West – 2003	EP33D-04 – The Oxidation of Landscapes REMPE, D.; HAHM, W.J.; DIETRICH, W.E.	Eel River
2:55 – 3:10 PM	EP33D – Landscape Evolution from a Critical Zone Science Perspective II Mosccone West - 2003	EP33D-06 – Water-regolith-energy Interaction in Landscape Evolution and its Influence on Forming Asymmetric Landscape: An Example from the Shale Hills Critical Zone Observatory of Central Pennsylvania ZHANG, Y.; SLINGERLAND, R.L.; SHI, Y.; DUFFY, C.; WEST, N.	Susquehanna
2:55 – 3:10 PM	H33M – The Hydrology-Vegetation-Climate Nexus: Identifying Process Interactions and Environmental Shifts in Mountain Catchments II Mosccone West – 3011	H33M-06 – Drought effects on evapotranspiration and subsurface water storage in the southern Sierra Nevada BALES, R.; GOULDEN, M.; HUNSAKER, C.; CONKLIN, M.; HARTSOUGH, P.; O’GEEN, A.; HOPMANS, J.; SAFEEQ, M.	Sierra

3:10 – 3:25 PM	EP33D – Landscape Evolution from a Critical Zone Science Perspective II Moscone West - 2003	EP33D-07 – How Saharan Dust Slows River Knickpoints: Coupling Vegetation Canopy, Soils and the Foundation of the Critical Zone BROCARD, G.; WILLENBRING, J.; HARRISON, E.; SCATENA, F.	Luquillo
4:00 – 4:15 PM	EP34A – Landscape Evolution from a Critical Zone Science Perspective III Moscone West – 2003	EP34A-01 – Seeking GUTH, the Grand Unified Theory of Hillslopes: Linking Weathering, Erosion and Landscapes ANDERSON, S.P.; DIETRICH, W.E.; REMPE, D.; WEST, N.; BRANTLEY, S.L.; BACON, A.R.; BUSS, H.L.; FISHER, B.; FLINCHUM, B.A.; HOLBROOK, W.S.; KOS, P.Z.; LEOPOLD, M.; MOON, S.; NIELSON, T.; PELLETIER, J.D.; TERRY, N.	Susquehanna / Eel River / Boulder Creek
4:45 – 5:00 PM	H34B – Disturbance Hydrology: Assessing the Impacts of Abrupt Landscape Changes on Watershed Hydrology III Moscone West – 3016	H34B-04 – Factors Affecting Source – Water Quality after Disturbance of Forests by Wildfire MURPHY, S.; MARTIN, D.; MCCLESKEY, R.; WRITER, J.	Boulder Creek
5:00 – 5:15 PM	EP34A – Landscape Evolution from a Critical Zone Science Perspective III Moscone West – 2003	EP34A-05 – Trajectories of soil particles on a hillslope conveyor: Implications for particle age and Be-10 ANDERSON, R.S.	Boulder Creek
5:15 - 5:30 PM	EP34A – Landscape Evolution from a Critical Zone Science Perspective III Moscone West – 2003	EP34A-06 – Quantifying present-day and long-term shale weathering rates across a latitudinal climosequence DERE, A.L.; ANDREWS, E.; WHITE, T.S.	Susquehanna
<b>Thursday, December 17, 2015</b>			
8:00 – 12:20 PM	B41A – Advances in Understanding the Scaling of Fine-Scale Spatial Hydrological and Biogeochemical Heterogeneity, Their Interactions, and Implications for Earth-System Dynamics Posters Moscone South- Poster Hall	B41A-0404 – The Sensitivity of soil O <sub>2</sub> and redox biogeochemistry to landscape position and climate SILVER, W.; RUAN, L.; O'CONNELL, C.; GUTIERREZ DEL ARROYO, O.	Luquillo
8:00 – 12:20 PM	B41G – The Depth Attenuation of Soil Organic Carbon Storage, Turnover, and Fate:	B41G-0511 – Into the Deep: Variability in Soil Microbial Communities and Carbon Turnover Along a Tropical Forest	Luquillo

	Observations, Data Synthesis, and Modeling I Posters Moscone South - Poster Hall	Soil Depth Profile PETT-RIDGE, J.; MCFARLANE, K.; HECKMAN, K.; REED, S.; WOOD, T.	
8:00 – 12:20 PM	B41F – Soil Organic Matter Dynamic on Mineral Surfaces: Nano- to Global-Scale Processes I Poster Moscone South – Poster Hall	B41J-0503 – Iron reduction and carbon dynamics during redox fluctuation in soil slurries from Luquillo CZO (Puerto Rico) BARCELLOS, D.; SILVER, W.; PETT-RIDGE, J.; THOMPSON, A.	Luquillo
8:00 – 12:20 PM	EP41C – Mechanistic Underpinnings of Damage, Disruption and Downslope Transport of Rock and Regolith Posters Moscone South – Poster Hall	EP41C-0936 – Exploring the landscape evolution of the subalpine meadow-forest system driven by the geomorphic work performed by the Northern Pocket Gopher WINCHELL, E.; ANDERSON, R.S.; LOMBARDI, E.; DOAK, D.	Boulder Creek
8:00 – 12:20 PM	EP41C – Mechanistic Underpinnings of Damage, Disruption and Downslope Transport of Rock and Regolith Posters Moscone South - Poster Hall	EP41C-0941 – Microclimate controls on weathering: Insights into deep critical zone evolution from seismic refraction surveys in the Susquehanna Shale Hills Critical Zone Observatory WEST, N.; KIRBY, E.; NYBLADE, A.; BRANTLEY, S.L.	Susquehanna
8:00 – 12:20 PM	EP41C – Mechanistic Underpinnings of Damage, Disruption and Downslope Transport of Rock and Regolith Posters Moscone South - Poster Hall	EP41C-0943 – If Rocks Could Talk: Origin Stories of Stream Sediment Told by Apatite Helium Ages and Cosmogenic Nuclides LUKENS, C.; RIEBE, C.; SKLAR, L.; SHUSTER, D.	Sierra
8:00 – 12:20 PM	H41A – Advances in Hydroclimatology and Climate Change I Posters Moscone South – Poster Hall	H41A-1281 – Role of Meteorological Controls on the Inter-annual Groundwater Dynamics of Wetlands in a Southeastern US Watershed LIU, Y.; KUMAR, M.	Calhoun
8:00 – 12:20 PM	H41G – Water resources management and policy in a changing world III Posters Moscone South – Poster Hall	H41G-1429 – Critical zone services as a measure for evaluating the trade-offs in intensively managed landscapes RICHARDSON, M.; KUMAR, P.	IML-CZO
8:00 – 12:20 PM	NS41A – Current Trends in High-Resolution Subsurface Imaging I Posters Moscone South – Poster Hall	NS41A-1922 – Spatially continuous characterization of the bedrock – regolith interface at the Rio Icacos Watershed (Luquillo Critical Zone Observatory) Puerto Rico	Luquillo

		NTARLAGIANNIS, D.; COMAS, X.; WRIGHT, W.; RECINOS, E.; HYNEK, S.; BRANTLEY, S.	
8:15-8:30 AM	C41F – Modeling Snow and Streamflow for Water Supply Forecasts from Mountain Basins in a Rapidly Changing Climate II Moscone West – 3005	C41F-02 – Rapid Snowmelt Leads to Greater Streamflow Across the Western United States BARNHART, T.B.; LIVNEH, B.; MOLOTCH, N.P.; KNOWELS, J.F.; HARPOLD, A.A.; SCHNEIDER, D.	Boulder Creek
8:30 – 8:45 AM	C41F - Modeling Snow and Streamflow for Water Supply Forecasts from Mountain Basins in a Rapidly Changing Climate II Moscone West - 3005	C41F-03 – Developing Snow Model Forcing Data from WRF Model Output to Aid in Water Resource Forecasting HAVENS, S.; MARKS, D.G.; WATSON, K.A.; MASANIK, M.; FLORES, A.N.; KORMOS, P.; HEDRICK, A.R.	Reynolds Creek
10:35-10:50 AM	C42B – Recent Advances in Monitoring, Measuring, and Modeling Snow and Cryospheric Processes for the Detection and Diagnosis of Change II Moscone West - 3005	C42B-02 – Inferring Process Changes from 30 Years of Distributed Mountain Snowfall and Measured Streamflow at Reynolds Creek Experimental Watershed, Idaho, USA KORMOS, P.R., MARKS, D.G.; SEYFRIED, M.S.; HAVENS, S.; HEDRICK, A.R.; GAREN, D.C.; PIERSON, F.B.	Reynolds Creek
10:35-10:50 AM	H42B – Hot Spots and Hot Moments at System Interfaces: Novel Sensors and Modeling Approaches for Transforming Understanding of Catchment Heterogeneity I Moscone West – 3022	H42B-02 – Parameter Measurement and Estimation at Variable Scales: Example of Soil Temperature in Complex Terrain SEYFRIED, M.S.	Reynolds Creek
10:50-11:05 AM	H42B – Hot Spots and Hot Moments at System Interfaces: Novel Sensors and Modeling Approaches for Transforming Understanding of Catchment Heterogeneity I Moscone West – 3022	H42B-03 – Optimization methods for multi-scale sampling of soil moisture and snow in the Southern Sierra Nevada OROZA, C.; ZHENG, Z.; ZHANG, Z.; GLASER, S.; BALES, R.; CONKLIN, M.	Sierra
11:05 -11:20 AM	H42F – Runoff Generation Processes in Changing Environments: Integrating Observations and Processes II Moscone West – 3020	H42F-04 – Using Statistical Mechanics and Entropy Principals to Interpret Variability in Power Law Models of the Streamflow Recession DRALLE, D.; THOMPSON, S.; KARST, N.	Eel River
11:50-12:05 PM	C42B – Recent Advances in Monitoring, Measuring, and	C42B-07 – Integrating snow albedo from the Airborne Snow Observatory into the	Reynolds Creek

	Modeling Snow and Cryospheric Processes for the Detection and Diagnosis of Change II Moscone West – 3005	distributed energy balance snowmelt model iSnobal SKILES, M.; PAINTER, T.H.; MARKS, D.G.; HEDRICK, A.R.	
1:40 - 6:00 PM	B43I – Soil Carbon Stocks, Fluxes, and Vulnerability at Large Spatial Scales II Posters Moscone South - Poster Hall	B43I-0666 – Mapping OSC (Soil Organic Carbon) using LIDAR-derived vegetation indices in a random forest regression model WILL, R.M.	Reynolds Creek
1:40 - 6:00 PM	ED43D – Tools, Resources, and Lessons Learned for Scientists and Engineers Engaging in Education and Public Outreach II Posters Moscone South - Poster Hall	ED43D-0885 – Making Knowledge from Numbers: The Shale Network as an Honest Broker for Evaluating and Educating about the Impacts of Hydraulic Fracturing in the Marcellus Shale Region POLLAK, J., BRANTLEY, S.L.; WILLIAMS, J.; DYKHOFF, S.; BRAZIL, L.I.	Susquehanna
1:40 - 6:00 PM	H43H – Remote Sensing and Modeling of the Terrestrial Water Cycle II Posters Moscone South - Poster Hall	H43H-1626 – SMAP L2/L3 Soil Moisture Product Validation using In Situ Based Core Validation Sites COLLIANDER, A.; JACKSON, T.J.; CHAN, S.; DAS, N.N.; KIM, S.; DUNBAR, R.S.; BINDLISH, R.; DANG, L.B.; BERG, A.A. ROLANDSON.T.L.; CAYLOR, K.K.; COSH, M.H.; ALJASSAR, H.K.; LOPEZ-BAEZA, E.; FERNANDEZ, J.; ZAMORA, A.; MCNAIRN, H.; PACHECO, A.M.; MOGHADDAM, M.; MONTZKA, C.; NOTARNICOLA, C.; NIEDRIST, G.; PELLARIN, T.; PULLIAINEN, J.; RAUTIAINEN, K.; RAMOS, J. SEYFRIED, M.S. SU, Z.; ZENG, Y.; VAN DER VELDE, R.; TEMIMI, M.; THIBEAULT, M.; DORIGO, W.; VREUGDENHIL, M.; WALKER, J.; WU, Z.; CALDWELL, T.G.; SPENCER, M.; O’NEILL, P.; ENTEKHABI, D.; YUEH, S.H.; NJOKU, E.G.	Reynolds Creek
1:40 - 6:00 PM	H43H – Remote Sensing and Modeling of the Terrestrial Water Cycle II Posters Moscone South - Poster Hall	H43H-1635 – Downscaling Satellite Data for Predicting Catchment-scale Root Zone Soil Moisture with Ground-based Sensors and an Ensemble Kalman Filter BALDWIN, D.C.	Susquehanna
1:40 - 6:00 PM	IN43B – Exploiting Big Earth Data: Computation, Testing and CyberGIS I Posters Moscone South - Poster Hall	IN43B-1730 – Scaling Critical Zone analysis tasks from desktop to the cloud utilizing contemporary distributed computing and data management approaches: A case study of project	Catalina-Jemez

		based learning of Cyberinfrastructure concepts PELLETIER, J.D.; SWETNAM, T.L.; MERCHANT, N.; CALLAHAN, N.; LYONS, E.	
2:25 – 2:40 PM	B13J – The Depth Attenuation of Soil Organic Carbon Storage, Turnover, and Fate: Observations, Data Synthesis, and Modeling II Moscone West – 2008	B13J-04 – Chemical characterization of iron-mediated soil organic matter stabilization in tropical subsoils COWARD, E.; PLANTE, A.	Luquillo
<b>Friday, December 18, 2015</b>			
8:00 – 12:20 PM	B51C – Characterizing Spatial and Temporal Variability of Hydrological and Biogeochemical Processes across Scales I Posters Moscone South – Poster Hall	B51C-0434 – Stream Ammonium Uptake Across Scales in Headwater Catchments of a Tropical Rainforest, Luquillo Mountains, Puerto Rico BRERETON, R.	Luquillo
8:00 – 12:20 PM	B51C – Characterizing Spatial and Temporal Variability of Hydrological and Biogeochemical Processes across Scales I Posters Moscone South – Poster Hall	B51C-0444 – Linking Spatial and Temporal Patterns of Soil Moisture with Upland Soil Iron Reduction HODGES, C.; MARKEWITZ, D.; THOMPSON A.	Calhoun
8:00 – 12:20 PM	B51H – Scaling from Points to Pixels: Remote Sensing Estimates of Ecosystem Characteristics across Space and Time I Posters Moscone South – Poster Hall	B51H-0526 – Estimating CO2 Fluxes Pre and Post Drought Using Remote Sensing Data in the Sierra Nevada Range MAZZIK, J.; GRIGSBY, S.; GOULDEN, M.; USTIN, S.	Sierra
8:00 – 12:20 PM	H51B – DEM-Based Watershed Hydrologic and Water Quality Modeling: Present and Future I Posters Moscone South – Poster Hall	H51B-1365 – Integration of fuzzy logic and image analysis for the detection of gullies in the Calhoun critical zone observatory using airborne LiDAR data NOTO, L.; BASTOLA, S.; DIALYNAS, Y.; BRAS, R.	Calhoun
8:00 – 12:20 PM	H51J – Isotope Proxies in the Critical Zone: Deciphering Time-Dependent Processes in Weathering Profile, Fingerprinting of Surface and Groundwater and Residence	H51J-1523 – The isotopic evolution of a raindrop through the critical zone OSHUN, J.; DIETRICH, W.E.; DAWSON, T.E.; REMPE, D.M., FUNG, I.Y.	Eel River

	Time Assessment Posters Moscone South – Poster Hall		
8:00 – 12:20 PM	H51N – Surface Hydrology Posters Moscone South – Poster Hall	H51N-1584 – Characterizing Runoff and Water Yield from Headwater Catchments in the Southern Sierra Nevada SAFEEQ, M.; HUNSAKER, C.	Sierra
9:15 – 9:30 AM	H51R – Hydrogeophysical Characterization of the Critical Zone I Moscone West - 3014	H51R-06 – Aspect Controls on Bedrock Fracturing and Seismic Velocity within the Boulder Creek Critical Zone Observatory BANDLER, A.; MAGILL, C.; HENDRICKS, S.; SINGHA, K.	Boulder Creek
9:30 – 9:45 AM	H51Q – Development of the Long-Term Agro-Ecosystem Research Network I Moscone West – 3011	H51Q-07 – Managing the critical zone to obtain and sustain multiple benefits from working landscapes: The value of partnerships between LTAR and NSF CZO networks LOHSE, K.A.; SEYFRIED, M.S.; PIERSON, F.B.	Reynolds Creek
9:30 – 9:45 AM	H51R – Hydrogeophysical Characterization of the Critical Zone I Moscone West - 3014	H51R-07 – Geophysical and Chemical Weathering Signatures Across the Deep Weathered-Unweathered Granite Boundary of the Calhoun Critical Zone Observatory RICHTER, D.; BACON, A.; BRANTLEY, S.; HOLBROOK, S.	Calhoun
9:45 – 10:00 AM	H51R – Hydrogeophysical Characterization of the Critical Zone I Moscone West - 3014	H51R-08 – Understanding the architecture of the deep critical zone in the Rio Icacos watershed (Luquillo Critical Zone Observatory, Puerto Rico) using a combination of hydrogeophysical methods COMAS, X.; WRIGHT, W.; HYNEK, S.; ORLANDO, J.	Luquillo
10:20 -10:35 AM	H52C – Modeling the Critical Zone: Integrating Processes and Data across Disciplines and Scales I Moscone West – 3016	H52C-01 – Hydrological signatures of Critical Zone Processes: Developing targets for Critical Zone modeling THOMPSON, S.E.; KARST, N.; DRALLE, D.	Eel River
10:50-11:05 AM	H52C – Modeling the Critical Zone: Integrating Processes and Data across Disciplines and Scales I Moscone West – 3016	H52C-03 – Hydrogeologic Influence on Changes in Snowmelt Runoff with Climate Warming: Numerical Experiments on Mid-Elevation Catchment in the Sierra Nevada, USA	Sierra

11:05-11:20 AM	H52C – Modeling the Critical Zone: Integrating Processes and Data across Disciplines and Scales I Moscone West – 3016	H52C-04 – The Dependence on Topography of the Influence of Soil Erosion and Deposition on the Carbon Cycle at the Calhoun Critical Zone Observatory BRAS, R.; DIALYNAS, Y.; BILLINGS, S.; RICHTER, D.; MARKEWITZ, D.	Calhoun
11:25-11:50 AM	H52C – Modeling the Critical Zone: Integrating Processes and Data across Disciplines and Scales I Moscone West – 3016	H52C-06 – Using WITCH to determine the factors that govern shale weathering and solute fluxes in the Critical Zone SULLIVAN, P.; GODDERIS, Y.; SHI, Y.; SCHOTT, J.; GU, X.; DUFFY, C.	Susquehanna
11:50 –12:05 PM	H52C – Modeling the Critical Zone Integrating Processes and Data across Disciplines and Scales I Moscone West – 3016	H52C-07 – Resolving the Multi-scale Behavior of Geochemical Weathering in the Critical Zone Using High Resolution Hydro-geochemical Models PANDY, S.; RAJARAM, H.	Boulder Creek
12:05-12:20 PM	H52C – Modeling the Critical Zone Integrating Processes and Data across Disciplines and Scales I Moscone West – 3016	H52C-08 – A Lumped Macroscopic Approach to Modeling Soil Moisture, CO2 Transport, and Chemical Weathering in the Criticzl Zone PORPORATO, A.; PAROLARI, A.	Calhoun
1:40 - 6:00 PM	B53C – Integrating In Situ and Remote Sensing Observations of the Terrestrial Biosphere to Provide Insights into Earth System Function III Posters Moscone South – Poster Hall	B53C-0571 – Spatial patterns of vegetation biomass and soil organic carbon acquired from airborne lidar and hyperspectral imagery at Reynolds Creek Critical Zone Observatory LI, A.; WILL, R.M.; GLENN, N.F.; BENNER, S.G.; SPAETE, L.; IIANGAKOON, N.T.	Reynolds Creek
1:40 - 6:00 PM	B53G – Ecosystems Biogeochemistry to Dynamic Hydrological and Climatic Drivers II Posters Moscone South – Poster Hall	B53G-0647 – Projecting the Dependence of Sage-steppe Vegetation on Redistributed Snow in a Warming Climate SODERQUIST, B.; KAVANAGH, K.; LINK, T.E.; SEYFRIED, M.S.; STRAND, E.K.	Reynolds Creek
1:40 - 6:00 PM	B53G – Ecosystems Biogeochemistry to Dynamic Hydrological and Climatic Drivers II Posters Moscone South – Poster Hall	B53G-0658 – Enrichment Ratio and Aggregate Stability Dynamics in Intensely Managed Landscapes WACHA, K.M.; PAPANICOLAOU, A.N.; FILLEY, T.R.; HOU, T.; ABBAN, B.K.; WILSON, C.G.; BOYS, J.F.	IML
1:40 – 6:00 PM	EB53B – Erosion and Sediment	EB53B-1022 – Big Blocks and River	Boulder

	Transport in Steep Landscapes III Posters Moscone South – Poster Hall	Incision: A Numerical Modeling Perspective SHROBE, C.; TUCKER, G.E.; ANDERSON, R.S.	Creek
1:40 – 6:00 PM	EP53A – Earth and Planetary Surface Processes: General Contribution Posters Moscone South – Poster Hall	EP53A-0951 – Absolute Dating of Strath Terraces along the Western High Plains Reveals Complicated History of Occupation and Incision FOSTER, M.A.; ANDERSON, R.S.; GRAY, H.; MAHAN, S.	Boulder Creek
1:40 – 6:00 PM	EP53A – Earth and Planetary Surface Processes: General Contribution Posters Moscone South – Poster Hall	EP53A-0960 – The Influence of Hillslope Steepness on Sediment Supply Size Distribution along Rivers Draining the Colorado Front Range SATO, M.; SHROBE, C.; TUCKER, G.	Boulder Creek
1:40 – 6:00 PM	EP53A – Earth and Planetary Surface Processes: General Contribution Posters Moscone South – Poster Hall	EP53A-0962 – Using Three-Dimensional Passive Seismic Imaging to Capture Near Surface Weathering and its Influence on Overlying Vegetation TAYLOR, N.; DUEKER, K.; RIEBE, C.; CHEN, P.; FLINCHUM, B.; HOLBROOK, S.	Sierra
1:40 – 6:00 PM	EP53B – Erosion and Sediment Transport in Steep Landscapes III Posters Moscone South – Poster Hall	EP53B-1022 – Honoring the Reality of Blocky Hillslopes: Case Study of a Vertical Dike at Shiprock, New Mexico GLADE, R.; ANDERSON, A.	Boulder Creek
1:40 – 6:00 PM	GC53B – Quantifying model uncertainties and robustness in climate projections for hydrological applications: perspectives from climate and hydrologic scientists II Posters Moscone South – Poster Hall	GC53B-1198 – Analysis of long-term precipitation sequencing pattern changes in north America ROQUE, S.; KUMAR, P.	IML
1:40 – 6:00 PM	H53B – Development of the Long-Term Agro-Ecosystem Research Network II Posters Moscone South – Poster Hall	H53B-1658 – National Research Networks Facilitate Mutually Beneficial Research at ARS Locations SEYFRIED, M.S.	Reynolds Creek
1:40 – 6:00 PM	H53E – Modeling the critical zone: integrating processes and data across disciplines and scales II Posters Moscone South – Poster Hall	H53E-1700 – Understanding the Concentration-Discharge Relationship of Chloride and Magnesium in Shale Hills Using RT-Flux-PIHM BAO, C.; SHI, Y.; SULLIVAN, P.L.; DUFFY, C.; BRANTLEY, S.L.	Susquehanna
1:40 – 6:00 PM	H53E – Modeling the critical zone: integrating processes and	H53E-1701 – Determining the role of hydraulic redistribution regimes in the	IML / Catalina-

	data across disciplines and scales II Posters Moscone South – Poster Hall	critical zone LEE, E.; KUMAR, P.; BARRON-GAFFORD, G.; SCOTT, R.; HENDRYX, S.; SANCHEZ-CANETE, E.	Jemez
1:40 - 6:00 PM	H53E – Modeling the critical zone: integrating processes and data across disciplines and scales II Posters Moscone South – Poster Hall	H53E-1703 – Assimilating the Cosmic-Ray Soil Moisture Observing System Measurements for Land Surface Hydrologic Model Parameter Estimation Using the Ensemble Kalman Filter XIAO, D.;	Susquehanna
2:55 - 3:10 PM	NH53A – Natural Hazards Research and Mitigation: Global Navigation Satellite System, Data Diversity, and Emerging Technology III Moscone South - 309	NH53A-06 – In-situ monitoring of California’s drought: Impacts on key hydrologic variables in the Southern Sierra Nevada OROZA, C.; ZHENG, Z.; ZHANGE, Z.; GLASER, S.; BALES, R.; CONKLIN, M.	Sierra
3:25 - 3:40 PM	H53K – Flow Mixing and Reaction: Interactions and Coupling in Hydrological systems II Moscone West - 3016	H53K-08 – Understanding How Nested Reaction Fronts under Watersheds Impact Flow, Transport, and Geomorphological Evolution: the Shale Hills Example BRANTLEY, S.L.	Susquehanna