# C. David Moeser

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Birthdate: xx.xx.1977

Citizenship: USA

## Education

***PhD* - ETHZ - Swiss Federal Institute of Technology Zürich** (Jan. 2012- Dec. 2015)
- Department of Environmental Systems Science: *Surface Water Hydrology*

Dissertation Title: The Influence of Forest Canopy Structure on Snow Hydrology (Link)

***M.S.* - University of Nevada, Reno** (2008- 2010)
- Department of Hydrologic Sciences: *Surface Water Hydrology*

Thesis Title: Development, Analysis and Use of a Distributed Wireless Sensor Network for Quantifying Spatial Trends of Snow Depth and Snow Water Equivalence (Link)

***B.S.* - Fort Lewis College,** Durango, Colorado (2001-2004)
- Department of Geosciences: *Environmental Geology, Chemistry Minor*

Thesis Title: Discriminating Pre- and Post- Mining Effects on The Middle Fork of Mineral Creek, Silverton, CO, Using Tree Core Analysis

- Awarded outstanding senior in the earth sciences (Eugene M. Shoemaker Award) | Freda T. Roof and Julie Turner Oliva Scholarship recipient, given for superior academic performance

## Languages

- *Spanish – CEFR level B2* | Xela, Guatemala (2005) | Bogota, Colombia (2006) | La Paz, Bolivia (2007)
- *German – CEFR level B2* | Chur, Switzerland (2012-2014) | Davos, Switzerland (2014-2016)

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## Employment

**USGS – NM Water Science Center** –*Hydrologist* (July 2016 – Present) Albuquerque, NM

**WSL Institute for Snow and Avalanche Research SLF** –*Research Snow Hydrologist / PhD candidate* (February 2012 – February 2016) Davos, Switzerland

**World Business Council for Sustainable Development – Water Project** – *Temporary Contract Hydrologist* (September 2011 – February 2012) Geneva, Switzerland

**WSL Institute for Snow and Avalanche Research SLF** – *(Intern) Snow Hydrologist* (Jan 2011 – July 2011) Davos, Switzerland

**University of Nevada, Reno** – *Research Assistant* (September 2008 – December 2010)

**BLM / U.S. Forest Service –** *Hydrologic Technician* (2005- 2007) Durango, CO

**Tom D. Gorton Construction –** *Carpenter* (1999- 2004) Durango, Colorado

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## Teaching

**Invited Instructor** – **ETHZ**, Department of Environment Systems Science (2013, 2014) | Course: *Environmental Measurement Laboratory (701)*

**Teaching assistant - University of Nevada, Reno** – Department of Natural Resources and Environmental Science (2008–2010) | Course(s): *Ecohydrology (295), Ecohydrology field camp (400)*

**University of Nevada Cooperative Extension,** *"Discover your Future Program"* (2009, 2010)

**Advised graduate students**

- Jiri Roubinek: MSc – *Snow hydrology* (2012) – Charles University, Prague – Czech Rep.
- Giulia Mazzotti: MSc – *Snow hydrology* (2015) – ETH, Zürich - Switzerland

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## Published papers

**Moeser, D**., G. Mazzotti, N. Helbig, T. Jonas; *Representing spatial variability of forest snow: Implementation of a new interception model*, 2016; Water Resources Research, doi: 10.1002/2015WR017961 (Link)

**Moeser**, D., M. Stähli, T. Jonas; *Improved snow interception modeling using novel canopy parameters from airborne LIDAR data*, 2015; Water Resources Research, doi: 10.1002/2014WR016724 (Link)

**Moeser, D**., F. Morsdorf, T. Jonas; *Novel forest structure metrics from airborne LiDAR data for improved snow interception estimation***,** 2015; Agriculture and Forest Meteorology, doi: 10.1016/j.agrformet.2015.04.013 (Link)

**Moeser, D**., J. Roubinek, P. Schleppi, F. Morsdorf, T. Jonas; *Canopy closure, LAI and radiation transfer from airborne LiDAR synthetic images*; 2014; Agricultural and Forest Meteorology, doi: 10.1016/j.agrformet.2014.06.008 (Link)

## Papers in progress

Douglas-Mankin, K., **Moeser**, D., *Calibration of PRMS to Simulate Pre- and Post-Fire Hydrologic Response in the Upper Rio Hondo Basin, New Mexico*., United States Geological Survey Scientific Investigations Report : submitted – March 2018

Tillery. A., and **Moeser**, D., Martin, M., *Changes in Watershed Hydrologic Response with Time in a Severely-burned, High-desert Canyon, Bandelier National Monument*, NM, Int. J. Wildland Fire: in preparation for submission June 2018

**Moeser**, D, Broxton, P., Harpold, A., *Improvements in Snow Modeling in Mountain Forests from Three Dimensional Canopy Structure*., Water Resources Research: in preparation for submission 2018

## External reports and successful grant proposals

***South Central Climate Science Center –*** *'The Effects of Wildfire on Snow Water Resources Under Multiple Climate Conditions (2017): ~375,000 USD*
***Swiss National Science Foundation –*** *'Snow Distribution Dynamics under Forest Canopy' (2012) (Link) : ~175,000 USD*
***Agriculture Research Service –*** *'Recommended Procedure for Assessing Soil Disturbances in Vegetation Management Projects within Sensitive Areas of the Lake Tahoe Basin'* (2008)

## Conference papers and presentations

Helbig, N., D. **Moeser**, M. Teich; 'Spatially-Averaged Sky View Factors for Snow Interception over Forest Canopy,' European Geophysical Union, Vienna, Austria, April 2018

**Moeser**, D., K. Douglas - Mankin; 'Hydrologic Impacts of Wildfire on a Small Sub-alpine Southwestern U.S. Watershed: A Simplified Modeling Approach,' American Geophysical Union, New Orleans, LA, December 2017

Sexstone, G., C. Penn, D. Clow, D. **Moeser,** G. Liston; 'Changes in the Relation Between Snow Station Observations and Basin Scale Snow Water Equivalence,' American Geophysical Union, December 2017

**Moeser**, D., M. Stähli; 'Forest Canopy Controls on Snow Hydrology,' Western Snow Conference, Boise, Idaho, March 2017

**Moeser**, D.; 'Forest snow hydrology,' Department colloquium series, Department of Earth and Environmental Science, New Mexico Tech, Socorro, New Mexico, January 2017

**Moeser**, D.; 'The influence of forest canopy structure on snow hydrology: Novel modeling and visualization approaches,' Department colloquium series, Department of Earth and Planetary Sciences, University of New Mexico, Albuquerque, New Mexico, December 2016

**Moeser**, D., M. Stähli; 'The influence of canopy structure on snow,' poster presentation, American Geophysical Union meeting, San Francisco, California, December 2016

**Moeser**, D., M. Stähli, T. Jonas; '*Snow interception modeling*,' oral presentation, The International Union of Geodesy and Geophysics, Prague, Czech Republic, June 2015

**Moeser**, D., F. Morsdorf, T. Jonas; *'Improving snow interception modeling using LiDAR data,'* poster presentation, American Geophysical Union meeting, San Francisco, CA, December 2014

**Moeser**, D., J. Roubinek, F. Morsdorf, T. Jonas; '*Snow distribution dynamics under forest canopy*,' poster presentation, American Geophysical Union meeting, San Francisco, CA, December 2013

**Moeser**, D., T. Jonas, F. Morsdorf; *'Linking snow accumulation patterns in forests with LiDAR derived canopy structure data,'* oral presentation, Davos Atmosphere and Cryosphere Assembly – The International Union of Geodesy and Geophysics, Davos, Switzerland, July 2013

Jonas, T., **D. Moeser**, F. Morsdorf; '*Linking forest snow distribution measurements with canopy structure data*,' Presented by Dr. Tobias Jonas at the American Geophysical Union meeting, San Francisco, California, December 2012

Jonas, T., **D. Moeser**, J. Magnusson, M. Bavay; '*Validation of multiple approaches for modeling SWE Distribution and subsequent snowmelt in a small alpine watershed*,' Presented by Dr. Tobias Jonas at the International Union of Geodesy and Geophysics, Melbourne, Australia, July 2011

**Moeser, D.**, M. Walker, C. Skalka, J. Frolik; '*A distributed wireless sensor network for quantifying spatial trends of snow depth and snow water equivalent*,' Presented by Dr. Mark Walker at the 79th Annual Western Snow Conference, Stateline, NV, April 2011.

**Moeser, D.**, M. Walker, C. Skalka, J. Frolik; *'Development, analysis & sse of a distributed wireless sensor network for quantifying spatial trends of snow,'* Presented by Dr. Mark Walker at the Nevada Water Resources Association, Annual conference Reno, NV, February 2011.

**Moeser, D**., Skalka, C**.**, M. Walker, J. Frolik; 'Sno*wcloud: development of a distributed in situ instrument for snowpack monitoring*,' Poster presentation, American Geophysical Union meeting, San Francisco, California, December 2009

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## Volunteer experience

**Student Organization for International Water Issues** (2008-2010) Reno, NV

**Animas River Stakeholders Group** (2003 – 2006) Silverton, CO

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## Hobbies

Rock Climbing, Mountaineering, Travel, Languages