CV

Name:	Lehning
Surname:	Michael
Date of birth:	17.10.1967
Title(s):	Full Professor EPF Lausanne Dr. Sc. Nat. (ETH Zürich) Master of Science (University of California) Diplom Geoökologe (Universität Bayreuth)
Position / Function	Professor of Cryospheric Sciences, École Fédéral Polytechnique de Lausanne (since 2011) Head Research Unit "Snow and Permafrost" WSL, Swiss Federal Institute for Forest, Snow and Landscape Research, SLF, Davos (since 2006)
Number of employees in charge	45 (Depending on number of diploma students and internships)
Immediate Past Position / Function	Head Research Group "Process Models" and "Snowcover and "Micrometeorology" WSL, Swiss Federal Institute for Forest, Snow and Landscape Research, SLF, Davos, 1999 – 2011, 5 to 15 group members.
Languages	German, English, Italian, French (good), Spanish (fair)
Education	Geoökologie (Major Meteorology / Hydrology) Universität Bayreuth (Diplom) Atmospheric Sciences, University of California (Master of Science) Statistics (Post Graduate Studies) Atmospheric Physics (Ph.D.)
Major research areas	Interaction Cryosphere – Atmosphere in particular Snow Processes Natural Hazards Warning and Forecasting Turbulence and Boundary Layer Flows over Alpine Terrain Mountain Hydrology and Permafrost Modelling
Teaching	Snow Physics and Snow Hydrology, MA (4 ECTS) Atmospheric Physics, BA (4 ECTS) Semaine ENAC in Davos: An interdisciplinary study week for architects, civil and environmental engineers to understand building – snow interactions in a snowy mountain environment, BA (3 ECTS) Joint Appointment (Lehrauftrag) from ETHZ and University of Zürich for full Master Course: "The snow cover: Physics, Interaction with the Atmosphere and Modeling"; Lecture and Laboratory, MA (4 ECTS). Short Course on Snow (SLF Short Course) Training Workshops for Avalanche Practitioners

Advanced Training	Project Management
	Leadership and Conflict Communications
	Teaching using the WWW
	Teaching at the University Level
Scientific Boards	Appointed Chair Scientific Program Committee IAMAS / IACS Conference 2013 as part of the IUGG
	Editor (AE) AGU Journal "Water Resources Research"
	Guest Editor Special Issue "Snow – Atmosphere Interactions and Hydrological Consequences" Advances in Water Resources (AWR).
	Member of the Management Committee of the ETH Center of Environment and Sustainability CCES (2007 – 2009)
	Habilitation Committee Dr. M. Bernhardt, LMU Munich
	Tenure Committee Prof. Bruce Jamieson, University of Calgary
	Advisory Board ETH Domain "Future and Strategy of Swiss Supercomputing"
	Reviewer for Swiss National Science Foundation; NSF; Austrian National Science Foundation; German National Science Foundation; CRREL
	Promotion Committee for 7 External Ph.D. candidates
Present professional activities / most important projects	Analysis of current and future snow and water resources in the Alps with (extreme value) statistical methods and numerical models.
	Field investigations of land – atmosphere exchange in mountains and especially over snow with a focus on inhomogeneous snow distribution. Measurements and analysis of turbulent fluxes and terrain effects.
	Development of the "Swiss Experiment" an ETH CCES activity to install a large and common platform for environmental field experiments including a cyber-collaboratory and data assimilation for better understanding the Alpine environment and for improved natural hazards prediction.
	Development and operational implementation of a finite element snowcover model to forecast evolution of snow cover, stability of slopes and avalanche danger. Development of 3D model modules (radiation, vegetation, permafrost, runoff) to address problems in hydrological, ecological and climate research.
	Construction and operation of a two phase wind tunnel with natural snow particles to study snow drift and exchange processes between the snow cover and the atmosphere.
Former professional activities	Research and Teaching Assistant, University of California.
	Research and Teaching Assistant, ETH Zürich.
	Californian Air Resources Board, Sacramento, USA: Development of computer code and user's guide to determine source strengths from downwind concentration measurements.
	MetAir AG, Illnau, Switzerland: Calculation and interpretation of regional pollutant budgets (photochemical smog) to support decision making in the Swiss government.

Grants

2011: ETH CCES grant "Data and Knowledge Platform" P. I. (CHF 1'000'000)

2010: EU Interreg and Cantonal Funding for application oriented work in Alpine flood forecasting and climate change, P. I. (CHF 300'000).

2009: Swiss National Science Foundation: Wind tunnel investigations of shear stress partitioning over plants, P. I. (CHF 350'000).

2009: Swiss National Science Foundation: Field investigations of surface heterogeneity and land-surface exchange in mountains, P. I. (CHF 270'000).

2008: ETH CCES grant "Swiss Experiment" Main Project – Project on new technology and interdisciplinary environmental observation systems, P. I. (CHF 2'600'000).

2008: HYDROSYS: EU – Project on new technology and hydrological consequences of cryosphere degradation in the ALPS, P.I. (CHF 630'000).

2007: SNF R'EQUIP Terrestrial Laser Scanning System, P.I. (CHF 139'000).

2007: ETH CCES grant "EXTREMES" on spatial extreme value statistics, Co-P. I. (CHF 335'000).

2006: ETH CCES grant "Swiss Experiment" Pre-Project, P. I. (CHF 250'000).

2006: Swiss National Science Foundation: Wind tunnel investigation of snow ventilation, P. I. (CHF 170'000).

2005: KTI: Development of high resolution forecasting models of road surface conditions for winter road maintenance, P. I. (CHF 200'000).

2004: AWARE: EU – Project on water resources in Alpine catchments with a focus on snow cover processes, P. I. (CHF 255'000).

2003: Swiss National Science Foundation: Small scale investigation of flow, snow drift and surface energy balance, P. I. (CHF 222'000).

2002: Board of the Swiss Federal Institutes of Technology: Distributed Computing (GRID) for Natural Hazard Prediction, Co - P. I. (CHF 497'000).

2000: Swiss National Science Foundation: REQUIP: A cold, two phase wind tunnel with natural snow particles, P. I. (CHF 140'000).

1997: Swiss National Science Foundation: Boundary layer wind field and the associated snow transport over high alpine topography, P. I. (CHF 150'000).

1992: Scholarship for foreign studies at UC Davis.

Awards

Bavarian scholarship for highly gifted students (1988 - 1992)

Award for the best student paper presentation at a conference of the American Meteorological Society in Charlotte (1995), USA.

Award for extraordinary performance in transfer of scientific knowledge to users, Swiss Federal Institute for Forest, Snow and Landscape Research (2001).

Offer (Ruf) of a full professorship (chair: W3) in environmental physics at the University of Tübingen (2009).

Ph.D. Theses advised	Judith Doorschot: Snow saltation: Physical principles, numerical models and experimental verification (Prof. A. Waldvogel, ETHZ, 1999 - 2002).
	Ingo Meirold Mautner: Interaction snow – radiation – vegetation and ecological implications (Prof. M. Kuhn, University of Innsbruck, 2001 - 2004).
	Andy Clifton: Wind tunnel studies of saltation drifting snow and exchange processes between the snow cover and the atmosphere (Prof. T. Rösgen, ETHZ, 2003 - 2007).
	Barbara Landl: Contribution of multiple scattering and longwave emission in steep terrain to the surface energy balance over snow (Prof. A. Ohmura, ETHZ, 2003 - 2007).
	Françoise Faure: Simulation of very high resolution wind fields over steep Alpine terrain (Prof. M Parlange, EPFL, 2004 - 2008).
	Nora Helbig: Distributed energy balance calculations for mountainous winter roads (Prof. W Häberli, Universität Zürich, 2005 - 2008).
	Michael Schirmer: Model support for avalanche forecasting (Prof. C. Schneider, RWTH Aachen, 2006 - 2010).
	Evelyn Zenklusen-Mutter: Spatial extreme value statistics of snow and permafrost in the Swiss Alps (Prof. A. Davidson, EPFL 2008 - 2011).
	Rebecca Mott: The role of variable deposition and variable energy balance in shaping the variable mountain snow cover (Prof. M. Parlange, EPFL 2009 - 2011).
	Benjamin Walter: Shear stress partitioning in flexible plant canopies (EPFL 2008 -).
	Christine Groot-Zwaftink: Lagrangian LES simulation of snow transport and sublimation (EPFL 2009 -).
	Nander Wever: Assessment of Alpine snow water and soil water resources based on high altitude weather stations (EPFL 2010 -).
	Walter Steinkogler: Influence of snow cover properties on avalanche dynamics (EPFL 2010 -)
	Thomas Grünewald: Alpine snow distribution and its relationship to surface roughness (EPFL 2011 -).
External Ph.D. – Committee Member	Judith Stocker: Modeling the effect of snow and ice on the global environmental fate and long-range transport potential of semi-volatile organic compounds (ETHZ).
	Heike Hebbinghaus: Simulation der stabilen Grenzschicht und der Schneedrift über Grönland (Universität Bonn).
	Davide Bavera: Water availability in mountain regions: estimation of Snow Water Equivalent using ground data and MODIS images (Polytechnico di Milano).
	Ružica Dadić: Monitoring and Modeling Snow Accumulation Processes in Glacierized Alpine Basins (ETHZ).
	Marc Olefs: Artificial Protection of Alpine Snow and Ice (University of Innsbruck).
	Vincent Vionnet: Blowing and Drifting Snow Modeling for Meteorological Applications (Meteo France).
	Federica Martina: Data Assimilation for Snow and Runoff Modelling in Mountains (University of Genova).
Professional associations	IGS (International Glaciological Society)
	AGU (American Geophysical Union)
	SGG (Swiss Glaciological Society)
	EGU (European Geophysical Society)
	IACS / IAMAS of IUGG

Publications

<u>Reviewed ISI Articles</u>

Lehning, M., Shonnard, D.R., Chang, D.P.Y., Bell, R.L.,1994: An Inversion Algorithm for Determining Area-Source Emissions from Downwind Concentration Measurements, *J. Air & Waste Management. Assoc.,* 44: 1204-1213.

Lehning, M., Richner, H., Kok, G.L., 1996: Pollutant Transport over Complex Terrain: Flux and Budget Calculations For The POLLUMET Field Campaign, *Atmos. Env..*, 30, 3027 - 3044.

Lehning, M., Richner, H., Kok, G.L., Neininger, B., 1998: Fluxes and Budgets of Air Pollutants over Densely Populated Areas, *Atmos. Env.*, 32/8, 1353-1363.

Lehning, M., Richner, H., B., Kok, G.L., 1998: Transport of Air Pollutants from the Boundary Layer to the Free Troposphere over Complex Terrain*, Phys. Chem. Earth,* 23, 667-672.

Lehning, M., 1998: The Regional Pollutant Budget of the Atmospheric Boundary Layer: Concept, Interpretations and Observational Results, *Meteorol. Zeitschrift*, 7, 112-119.

Lehning, M., Bartelt, P., Brown, R.L., Russi, T., Stöckli, U., Zimmerli, M., 1999: Snowpack Model Calculations for Avalanche Warning based upon a new Network of Weather and Snow Stations, *Cold Reg. Sci. Technol.,* 30, 145-157.

Lehning, M., Doorschot, J., Bartelt, P., 2000: A Snow Drift Index Based on SNOWPACK Model Calculations, *Ann. Glac.,* 31, 382-386.

Doorschot, J., Raderschall, N., Lehning, M., 2001. Measurements and one-dimensional model calculations of snow transport over a mountain ridge, *Ann. Glac.,* 32, 153 - 158.

Lehning, M., C. Fierz and C. Lundy. 2001**.** An objective snow profile comparison method and its application to SNOWPACK. *Cold Reg. Sci. Technol.*, 33, 253-261.

Brown, R.L., Satyawali, P.K., Lehning, M., Bartelt, P., 2001**.** Modeling the changes in microstructure of snow during metamorphism. *Cold Reg. Sci. Technol.*, 33, 91-101.

Lundy, C.C., Brown, R.L., Adams, E.E., Birkeland, K.W., Lehning, M., 2001. A statistical validation of the SNOWPACK model in a Montana climate. *Cold Reg. Sci. Technol.*, 33, 237-246.

Lehning, M., C. Fierz and C. Lundy. 2001**.** An objective snow profile comparison method and its application to SNOWPACK. *Cold Reg. Sci. Technol.*, 33, 253-261.

Fierz, C. and M. Lehning. 2001. Assessment of the microstructure-based snow-cover model SNOWPACK: thermal and mechanical properties. *Cold Reg. Sci. Technol.,* 33, 123-131.

Doorschot, J., Lehning, M., 2002. Equilibrium saltation: mass fluxes, aerodynamic entrainment and dependence on grain properties, *Bound. Layer Meteorol.,* 104(1), 111-130.

Corsmeier, U., Kalthoff, N., Vogel, B., Hammer, M.-U., Fiedler, F., Kottmeier, Ch., Volz-Thomas, A., Konrad, S., Glaser, K., Neininger, B., Lehning, M., Jaeschke, W., Memmesheimer, M., Rappenglück, B., Jakobi, G., 2002. Ozone and PAN formation inside and outside of the Berlin plume – Process analysis and numerical process simulation, *J. Atmos. Chem.*, 42, 289-321.

Bartelt. P.B. and M. Lehning, 2002. A physical SNOWPACK model for Avalanche Warning Services. Part I: Numerical Model, *Cold Reg. Sci. Technol.*, 35/3, 123-145.

Lehning, M, Bartelt, P.B., Brown, R.L., Fierz, C., Satyawali, P., 2002. A physical SNOWPACK model for the Swiss Avalanche Warning Services. Part II: Snow Microstructure, *Cold Reg. Sci. Technol.*, 35/3, 147-167.

Lehning, M, Bartelt, P.B., Brown, R.L., Fierz, C., Satyawali, P., 2002. A physical SNOWPACK model for the Swiss Avalanche Warning Services. Part III: Meteorological Boundary Conditions, Thin Layer Formation and Evaluation, *Cold Reg. Sci. Technol.*, 35/3, 169-184.

Fierz, C., P. Riber, E.A. Adams, A.R. Curran, P.M.B. Föhn, M. Lehning and C. Plüss, 2003. Evaluation of snow-surface energy balance models in alpine terrain. *J. Hydrol.*, 282, 76–94.

Luetschg, M., Stoeckli, V., Lehning, M., Haeberli, W., Ammann, W., 2004. Temperatures in two boreholes at Flüela pass, Eastern Swiss Alps: the effect of snow redistribution on permafrost distribution patterns in high mountain areas. *Permafrost and Periglac. Processes*, 15, 283-297.

Obleitner, F., Lehning, M., 2004. Measurements and simulation of snow and superimposed ice at the Kongsvegen glacier, Svalbard (Spitzbergen), *J. Geophys. Res.*, 109D, D04106.

Doorschot, J., Lehning, M., Vrouwe, A., 2004. Field measurements of snow drift threshold and mass fluxes and related model simulations, *Bound. Layer Meteorol.,* 113(3), 347-368.

Spreitzhofer, G., Fierz, C., Lehning, M., 2004. SN_GUI: A graphical user interface for snowpack modelling, *Computers and Geosciences,* 30, 809-816.

Lehning, M., Fierz, C., Brown, B., Jamieson, B., 2004. Modelling instability for the snow cover model SNOWPACK, *Ann. Glac.,* 38, 331-338.

Yamaguchi, S., Sato, A., Lehning, M., 2004. Application of the numerical snowpack model (SNOWPACK) to the wet snow region in Japan, *Ann. Glac.,* 38, 266-272.

Meirold, I., Lehning, M., 2004. Measurements and model calculations of the solar shortwave fluxes in snow on Summit, Greenland, *Ann. Glac.,* 38, 279-284.

Rasmus, S., Räisänen J., Lehning, M., 2004. Estimating snow conditions in Finland in the late 21st century using the SNOWPACK model with regional climate scenario data as input, *Ann. Glac.,* 38, 238-244.

Hirashima, H., Nishimura, K., Baba, E., Hachikubo, A., Lehning, M., 2004. SNOWPACK model simulations for snow in Hokkaido, Japan, *Ann. Glac.,* 38, 123–129.

Nishimura, K., Baba, E., Hirashima, H., Lehning, M., 2005. Application of SNOWPACK model to snow avalanche warning in Niseko, Japan, *Cold Reg. Sci. Technol.,* 43, 62-70.

Lehning, M., Völksch, I., Gustafsson, D., Nguyen, T.A., Stähli, M., Zappa, M., 2006. ALPINE3D: A detailed model of mountain surface processes and its application to snow hydrology, *Hydrol. Processes,* 20, 2111-2128.

Schweizer, J., Bellaire, S., Fierz, C., Lehning, M., Pielmeier, C., 2006. Evaluating and improving the stability predictions of the snow cover model SNOWPACK, *Cold Reg. Sci. Technol.,* 46, 52-59.

Clifton, A., Rüedi, J.-D., Lehning, M., 2006. Snow saltation threshold measurements in a drifting snow wind tunnel, *J. Glaciol.,* 52(179), 585-596.

Rasmus, S., Gronholm, T., Lehning, M., 2007. Validation of the SNOWPACK model in five different snow zones in Finland, *Boreal Env. Res.,* 12(4), 467-488.

Clifton, A., Manes, C., Rüedi, J.-D., Guala, M., Lehning, M., 2008. On shear driven ventilation of snow, *Bound. Layer Meteorol.,* 126/2, 249-261, DOI: 10.1007/s10546-007-9235-0*.*

Domine, F., Albert, M., Huthwelker, T., Jacobi, H.-W., Kokhanovsky, A.A., Lehning, M., Picard, G., Simpson, W.R., 2008. Snow physics as relevant to snow photochemistry, *Atmos. Chem. Phys.*, 8, 171-208, DOI: www.atmos-chem-phys.net/8/171/2008/.

Lehning, M., Fierz, C., 2008. Assessment of snow transport in avalanche terrain, *Cold Reg. Sci. Technol.*, 51, 240-252, DOI: 10.1016/j.coldregions.2007.05.012.

Hirashima, H., Nishimura, K., Yamaguchi, S., Sato, A., Lehning, M., , 2008. Avalanche forecasting in a heavy snowfall area using the SNOWPACK model, *Cold Reg. Sci. Technol.*, 51, 191-203, DOI: 10.1016/j.coldregions.2007.05.013.

Clifton, A., Lehning, M., 2008. Simulations of wind tunnel snow drift using a semi-stochastic model, *Earth. Surf. Process. Landforms,* 33/14, 2156-2173, doi: 10.1002/esp.1673*.*

Lehning, M., Löwe, H., Ryser, M., Raderschall, N., 2008. Inhomogeneous precipitation distribution and snow transport in steep terrain, *Water Resour. Res.,* 44, W07404, doi:10.1029/2007WR006545.

Raderschall, N., Lehning, M., Schär, C., 2008. Fine scale modelling of the boundary layer wind field over steep topography, Wat. Resour. Res., 44, W09425, doi:10.1029/2007WR006544.

Dadic, R., M. Schneebeli, M. Lehning, M. A. Hutterli, and A. Ohmura (2008), Impact of the Microstructure of Snow on its Temperature: A Model Validation with Measurements from Summit, Greenland, *J. Geophys. Res.*, 113/D14, D14303, doi:10.1029/2007JD009562*.*

Lewis, H.W., Mobbs, S.D., Lehning M., 2008. Observations of cross-ridge flows across steep terrain, *Q.J.R.Meteorol.So*c., 134, 801–816, doi: 10.1002/qj.259.

Luetschg, M., Lehning, M., Haeberli, W., 2008. A sensitivity study of factors influencing warm/thin permafrost in the Alps. *J. Glaciol.*, 54/187, 696-704.

Michlmayr, G.., Lehning, M., Holzmann. H., Koboltschnig, G., Mott, R., Schöner, W., Zappa. M., 2008. Application of Alpine3D for glacier mass balance and runoff studies at Goldbergkees, Austria, *Hydrol. Processes,* DOI: 10.1002/hyp.7102.

Guala, M., Manes, C., Clifton, A., Lehning, M., 2008. On the saltation of fresh snow in a wind tunnel: profile characterization and single particle statistics, *J. Geophys. Res.*, 113, F03024, DOI: 10.1029/2007JF000975.

Mott, R., Faure, F., Lehning, M., Löwe, H., Hynek, B., Michlmayr, G., Prokop, A., Schöner, W., 2008. Simulation of seasonal snow cover distribution for glacierized sites (Sonnblick, Austrian Alps), *Ann. Glac.,* 49, 155-160.

Prokop, A., Schirmer, M., Rub, M., Lehning, M., Stocker, M., 2008. A comparison of measurement methods: terrestrial laser scanning, tachymetry and snow probing for the determination of the spatial snow depth distribution on slopes, *Ann. Glac.,* 49, 170-160.

Manes, C., Guala, M., Löwe, H., Bartlett, S., Egli, L., Lehning M., 2008. Statistical properties of fresh snow roughness, Wat. Res. Res., 44, W11407, doi:10.1029/2007WR006689.

Bavay, M., Lehning M., Jonas, T., Löwe, H., 2009. Simulations of future snow cover and discharge in Alpine headwater catchments, *Hydrol. Processes,* 22, DOI: 10.1002/hyp.7195.

Phillips, M., Zenklusen-Mutter, E., Kern-Luetschg, M., Lehning, M., 2009. Rapid Degradation of Ground Ice in a Ventilated Talus Slope: Fluela Pass, Swiss Alps. *Permafrost and Periglac. Processes*, 20, DOI: 10.1002/ppp.638, 1-14.

Harris, C., ….Lehning, M., et al., 2009. Permafrost and climate in Europe: Monitoring and modelling thermal, geomorphological and geotechnical responses, *Earth Science Reviews,* 92, DOI: 10.1016/j.earscirev.2008.12.002, 117-171.

Helbig, N., Löwe, H., Lehning M., 2009. Radiosity approach for the shortwave surface radiation balance in complex terrain, *J. Atmos. Sc.,* 66/9, 2900-2912, DOI: 10.1175/2009JAS2940.1.

Blanchet, J., Marty, C., Lehning, M., 2009. Extreme value statistics of snowfall in the Swiss Alpine region, *Wat. Res. Res.,* 45, W05424, doi:10.1029/2009WR007916.

Wever, N., Lehning, M., Clifton, A., Rüedi, J.-D., Nishimura, K., Yamaguchi, S., Nemoto, M., Sato, A., 2009. Verification of moisture budgets during drifting snow conditions in a cold wind tunnel, *Water Resour. Res.,* 45, doi:10.1029/2008WR007522.

Huwald, H., C. W. Higgins, M.-O. Boldi, E. Bou-Zeid, M. Lehning, and M. B. Parlange (2009), Albedo effect on radiative errors in air temperature measurements, *Water Resour. Res.*, 45, W08431, doi:10.1029/2008WR007600.

Schirmer, M., Lehning, M., Schweizer, J. 2009. Statistical forecasting of avalanche danger using simulated snow cover data, *J. Glaciol.*, 55/193, 761-768.

Dadic, R., Mott, R., Lehning, M., Burlando, P., 2010. Wind Influence on Snow Depth Distribution and Accumulation over Glaciers, *J. Geophys. Res.,* doi:10.1029/2009JF001261.

Helbig, N., Loewe, H., Mayer, B., Lehning, M., 2010. Explicit validation of a surface shortwave radiation balance model over snow covered complex terrain, J. Geophys. Res., 115, D18113, doi:10.1029/2010JD013970.

Stoessel, F., Manes, C., Guala, M., Fierz, C., Lehning, M., 2010. On the micrometeorology of surface hoar on mountain snow covers, *Water Resour. Res.*, doi:10.1029/2009WR008198.

Magnusson, J., Jonas, T., Lopez-Moreno, I., Lehning, M., 2010. Snow cover response to climate change in a high alpine and half glaciated basin in Switzerland, *Hydrology Research*, 41.3-4, 230-240, doi: 10.2166/nh.2010.115.

Mott, R., Lehning, M., 2010. Meteorological modelling of very high resolution wind fields and snow deposition for mountains, J. Hydromet., DOI:10.1175/2010JHM1216.1.

Olefs, M., Lehning, M., 2010. Textile protection of snow and ice: Measured and simulated effects on the energy and massbalance, *Cold Reg. Sci. Technol.* (2010), doi:10.1016/j.coldregions.2010.03.011.

Schirmer, M., Lehning, M., Schweizer, J., 2010. Statistical evaluation of local to regional snowpack stability using simulated snow-cover data, *Cold Reg. Sci. Technol.* (2010), 64/2, 110-118, doi: 10.1016/j.coldregions.2010.04.012.

Hirashima, H., Yamaguchi, S., Sato, A., Lehning, M., 2010. S Numerical modeling of liquid water movement through layered snow based on new measurements of the water retention curve, *Cold Reg. Sci. Technol.* (2010), 64/2, 94-103, doi: 10.1016/j.coldregions.2010.09.003.

Dadic, R., Mott, R., Lehning M., Burlando, P., 2010. Parameterization for wind-induced preferential deposition of snow, *Hydrol. Processes,* 24, 1994-2006, DOI: 10.1002/hyp.7776.

Grünewald, T., M. Schirmer, R. Mott, and M. Lehning., 2010. Spatial and temporal variability of snow depth and ablation rates in a small mountain catchment; *The Cryosphere*, 4, 215-225, 2010, doi:10.5194/tc-4-215-2010.

Mott, R., M. Schirmer, M. Bavay, T. Grünewald and M. Lehning, 2010. Understanding snow-transport processes shaping the mountain snow-cover, *The Cryosphere*, 4, 545-559, doi:10.5194/tc-4-545-2010.

Blanchet, J. and M. Lehning. Mapping snow depth return levels: smooth spatial modeling versus station interpolation, Hydrol. Earth Syst. Sci., 14, 2527–2544, doi:10.5194/hess-14-2527-2010.

Bartlett. S., and M. Lehning., 2011. A theoretical assessment of heat transfer by ventilation in homogeneous snowpacks, WRR, 47, W04503, doi:10.1029/2010WR010008.

Mott, R., Schirmer, M., and M. Lehning., 2011. Scaling properties of wind and snow-depth distribution in an Alpine catchment, *JGR Atmospheres,* 116, D06106, doi: 10.1029/2010JD014886.

Schirmer, M. and M. Lehning, 2011: Persistence in Intra-annual Snow Depth Distribution Part II: Fractal Analysis of Snow Depth Development; *Water Resour. Re*s., doi:10.1029/2010WR009429.

Schirmer, M. , Wirz, V,, Clifton, A., Lehning, M., 2011: Persistence in Intra-annual Snow Depth Distribution Part I: Measurements and Topographic Control; *Water Resour. Res.,* doi:10.1029/2010WR009426.

Gromke, C., Manes, C., Walter, B., Lehning, M., Guala, M., 2011: Aerodynamic roughness length of snow; *Boundary Lay. Meteorol.*, 141:21-34, DOI 10.1007/s10546-011-9623-3.

Lehning, M., Grünewald, T., Schirmer, M., 2011: Mountain snow distribution governed by elevation and terrain roughness, *Geophys. Res. Lett.*, doi:10.1029/2011GL048927.

Wirz, V., Schirmer, M., Gruber S., Lehning, M., 2011: Spatio-temporal measurements and analysis of snow depths in a rock face, *TC,* 5, 893–905, 2011, doi: 10.5194/tc-5-893-2011.

Grünewald, T., Lehning, M., 2011: Altitudinal dependency of snow amounts in two small alpine catchments: can catchment-wide snow amounts be estimated via single snow or precipitation stations, Ann. Glaciology*,* 52(58), 153-158.

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Groot Zwaaftink, C.D., Löwe, H., Mott, R., Bavay, M., Lehning M., 2011: Drifting snow sublimation: A high-resolution 3-D model with temperature and moisture feedbacks, *JGR Atmospheres,* 116, D16107, doi: 10.1029/2011JD015754.

Burri, K., Gromke, C., Lehning, M., Graf, F., 2011. Aeolian sediment transport over vegetation canopies: A wind tunnel study with live plants, *Aeolian Research,* 3, 205-213.

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Walter B, Gromke C, Lehning M (2012b) Shear stress partitioning in live plant canopies and modifications of Raupach's model. Boundary-Layer Meteorology, doi:10.1007/s10546-012-9719-4.

Other Reviewed Articles (selection)

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