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Research and Employment

1983 to 1994	Mountain Guide and Instructor for Mountain Guides
1992 to 1994	Project assistant at the Department of Geography, University Innsbruck
1994 to 1996	GIS expert at the engineering and consultant engineer office F. Falch, Landeck
1996 to 1999	FWF Project 'Spätglaziale Gletscher- und Klimageschichte des Ferwall'
1999 to 2008	Senior researcher at the Austrian Federal Research and Training Centre for Forests, Natural Hazards and Landscape
since 2008	Senior researcher and senior lecturer at the Institute of Geography, University of Innsbruck

Research (main areas)

Mountain Permafrost	Glacial geomorphology, glacial history
Alpine Geomorphology	Avalanche simulation models
Risk management, risk concepts, natural hazard management	LiDAR (airborne and terrestrial) analysis

Projects (selected)

bDFA – beyond dense flow avalanches. Quantifying the destructive reach of snow avalanches beyond the dense flow regime. Österreichische Akademie der Wissenschaften (ÖAW), Earth System Sciences (ESS), 01.04.2015 - 31.03.2018

GIHima-SAT – High resolution spaceborne studies of mass balance processes on glaciers of the Khumbu Himal, Nepal. Österreichische Forschungsförderungsgesellschaft mbH (FFG), ASAP (Österreichisches Weltraumprogramm), 01.01.2015 - 31.12.2017

SE.MAP – Spaceborne Environmental Monitoring of Alpine Processes. Österreichische Forschungsförderungsgesellschaft mbH (FFG), ASAP (Österreichisches Weltraumprogramm), 01.09.2013 - 29.02.2016

hiSNOW – High resolution monitoring and modelling under Climate Change condition - Combining ALS and TLS data acquisition with energy and mass balance modelling at Hochjochferner/Val Senales, Suth Tyrol (Italy). Autonome Provinz Bozen-Südtirol - Provincia autonoma di Bolzano - Alto Adige, Amt für Hochschulförderung, Universität und Forschung: Einzelprojekt wissenschaftl. Forschung, 01.02.2014 – 31.1.2016

VINSCHGLAC – A physically based regional mass balance approach for the glaciers of the Vinschgau catchment – glacier contribution to water availability. Autonome Provinz Bozen-Südtirol - Provincia

autonoma di Bolzano - Alto Adige, Amt für Hochschulförderung, Universität und Forschung:
Einzelprojekt wissenschaftl. Forschung, 01.12.2013 – 31.12.2015

MALS – Multitemporal Airborne Laserscanning Südtirol; Autonome Provinz Bozen-Südtirol - Provincia autonoma di Bolzano - Alto Adige, Amt für Hochschulförderung, Universität und Forschung:
Einzelprojekt wissenschaftl. Forschung, 01.01.2011-31.12.2013

C4AUSTRIA – Climate Change Consequences for the Cryosphere; Österreichischer Klimafonds, Austrian Climate Research Program (ACRP), 01.10.2009 – 30.09.2012

ENVICHANGE – 4D Information products for monitoring of environmental changes based on laser scanning and satellite data (ENVICHANGE). Österreichische Forschungsförderungsgesellschaft mbH (FFG), ASAP (Österreichisches Weltraumprogramm), 01.01.2009 - 30.06.2010

ALS-X Combination and assessment of airborne laser scanning data and TerraSAR-X data in glaciology and snow science. Österreichische Forschungsförderungsgesellschaft (FFG), ASAP, 01.10.2007 - 31.03.2009

GALAHAD – Advanced Remote Monitoring Techniques for Glaciers, Avalanches and Landslides Hazard Mitigation. FP6-2004-Global-3; EC 6th Framework Programme, Project N. 018409; 01.06.2005 – 30.11.2008

Publications (selected)

Bollmann, E., Girstmair, A., Mitterer, S., Krainer, K., Sailer, R., Stötter, J., 2015. A Rock Glacier Activity Index Based on Rock Glacier Thickness Changes and Displacement Rates Derived From Airborne Laser Scanning: Rock Glacier Activity Index. Permafrost and Periglacial Processes n/a–n/a.
doi:10.1002/ppp.1852

Helfricht, K., Lehning, M., Sailer, R., Kuhn, M., 2015. Local Extremes in the Lidar-Derived Snow Cover of Alpine Glaciers. Geografiska Annaler: Series A, Physical Geography n/a–n/a.
doi:10.1111/geoa.12111

Eisank, C., Rieg, L., Klug, C., Kleindienst, H., Sailer, R., 2015. Semi-Global Matching of Pléiades Tri-Stereo Imagery to Generate Detailed Digital Topography for High-Alpine Regions. GI_Forum 1, 168–177. doi:10.1553/giscience2015s168

Sailer R., Rutzinger M., Rieg L., Wichmann V., 2014. Digital elevation models derived from airborne laser scanning point clouds: appropriate spatial resolutions for multi-temporal characterization and quantification of geomorphological processes. Earth Surface Processes and Landforms 39 : 272–284. DOI: 10.1002/esp.3490

Helfricht, K., Schöber, J., Schneider, K., Sailer, R., Kuhn, M., 2014. Interannual persistence of the seasonal snow cover in a glacierized catchment. Journal of Glaciology 60, 889–904.
doi:10.3189/2014JoG13J197

Klug, C., Bollmann, E., Rieg, L., Sproß, M., Sailer, R., Stötter, J., 2014. Detecting and Quantifying Area Wide Permafrost Change, in: permAfrost - Austrian Permafrost Research Initiative. Austrian Academy of Sciences, Innsbruck, pp. 53–84.

Rieg L., Wichmann V., Rutzinger M., Sailer R., Geist T., Stötter J., 2014. Data infrastructure for multitemporal airborne LiDAR point cloud analysis – Examples from physical geography in high mountain environments. Computers, Environment and Urban Systems 45 : 137–146. DOI: 10.1016/j.compenvurbsys.2013.11.004

Sailer R, Bollmann E, Hoinkes S, Rieg L, Sproß M, Stötter J., 2012. Quantification of geomorphodynamic processes in glaciated and recently deglaciated terrain based on airborne laser scanning data. Geografiska Annaler: Series A, Physical Geography 94

Fritzmann, P., Höfle, B., Vetter, M., Sailer, R., Stötter, J. and Bollmann, E., 2011. Surface classification based on multi-temporal airborne LiDAR intensity data in high mountain environments. A case study from Hintereisferner, Austria. Zeitschrift für Geomorphologie, 55, Suppl. 2, p.105-126.

- Bollmann, E., Sailer, R., Briese, C., Stötter, J. and Fritzmann, P., 2011. Potential of airborne laser scanning for geomorphologic feature and process detection and quantification in high alpine environments. *Zeitschrift für Geomorphologie*, 55, Suppl. 2, p. 83-104.
- Sailer, R., Fellin, W., Fromm, R., Jörg, P., Rammer, L., Sampl, P., and Schaffhauser, A., 2008. Snow avalanche mass-balance calculation and simulation-model verification. *Annals of Glaciology* 48: 183-192.
- Sailer, R., Fromm, R., Jörg, P., Schaffhauser, A., and Adams, M., 2008. Ground Based Remote Sensing of Snow Properties and Avalanche Simulation. *Proceedings of Earch Conference 2008, Lesbos, Greece*.
- Schaffhauser, A., Fromm, R., Joerg, P., Luzi, G., Noferini, L., and Sailer, R., 2008. Remote sensing based retrieval of snow cover properties. *Cold Regions Science and Technology* 54: 164-175.
- Jörg, P., Wiatr, T., Fromm, R., Sailer, R., Rammer, L., and Rainer, E., 2007. Changes of Snow Depth Measured with a Terrestrial Laser Ranging System. In *Poster presented at EGU General Assembly 2007*.
- Ivy-Ochs, S., Kerschner, H., Reuther, A., Maisch, M., Sailer, R., Schaefer, J., Kubik, P., Synal, A., and Schlüchter, C. 2006. The timing of glacier advances in the northern European Alps based on exposure dating with cosmogenic ^{10}Be , ^{26}Al , ^{36}Cl and ^{21}Ne . In Siame, L.L., Bourlès, D.L., and Brown, E.T., eds., *In Situ-Produced Cosmogenic Nuclides and Quantification of Geological Processes*, Geological Society of America Special Paper, pp. 43-60 doi: 10.1130/2006.2415(04)
- Schmidt, R., Heller, A., and Sailer, R., 2005. Vergleich von Laserscanning mit herkömmlichen Höhendaten in der dynamischen Lawinensimulation mit SAMOS. *Internationale Geodätische Woche, Obergurgl* 131-140.
- Barbolini M, Cappabianca F, Frigo B, Sailer R., 2004a. The vulnerability of buildings affected by powder avalanches. In: *Proceedings of the CENAT Workshop "RISK 21: Coping with Risks due to Natural Hazards in the 2st Century"*, Ascona, Switzerland, 28 November - 3 December 2004, Balkema
- Barbolini M, Cappabianca F, Sailer R., 2004b. Empirical estimate of vulnerability relations for use in snow avalanche risk assessment. In: Brebbia, C. A., Editor. *Risk Analysis IV*. Southamton, Boston: WITPress, 2004 : 533–542.
- Sailer, R., Rammer, L., and Sampl, P., 2002. Recalculation of an artificially released avalanche with SAMOS and validation with measurements from a pulsed Doppler radar. *Natural Hazards and Earth System Sciences* 2: 211-216.