

Publication list

Peer-reviewed Web of Science publications:

- Eker, R., **Bühler, Y.**, Schlögl, S., Stoffel, A., and Aydın, A. (2019): Monitoring of Snow Cover Ablation Using Very High Spatial Resolution Remote Sensing Datasets, *Remote Sensing*, 11, 10.3390/rs11060699.
- Bühler, Y.**, von Rickenbach, D., Stoffel, A., Margreth, S., Stoffel, L., and Christen, M. (2018): Automated snow avalanche release area delineation – validation of existing algorithms and proposition of a new object-based approach for large-scale hazard indication mapping, *Natural Hazards Earth System Sciences*, 18, 3235-3251, 10.5194/nhess-18-3235-2018.
- Kääb, A., S. Leinss, A. Gilbert, **Y. Bühler**, S. Gascoin, S. G. Evans, P. Bartelt, E. Berthier, F. Brun, W.-A. Chao, D. Farinotti, F. Gimbert, W. Guo, C. Huggel, J. S. Kargel, G. J. Leonard, L. Tian, D. Treichler and T. Yao (2018): Massive collapse of two glaciers in western Tibet in 2016 after surge-like instability. *Nature Geoscience*, doi: 10.1038/s41561-017-0039-7
- Bühler, Y.**, Adams, M., Stoffel, A. and Boesch R. (2017): Photogrammetric reconstruction of homogenous snow surfaces in alpine terrain applying near infrared UAS imagery, *International Journal of Remote Sensing*, doi:10.1080/01431161.2016.1275060.
- Adams, M. S., **Bühler, Y.**, and Fromm, R. (2018): Multitemporal Accuracy and Precision Assessment of Unmanned Aerial System Photogrammetry for Slope-Scale Snow Depth Maps in Alpine Terrain, *Pure and Applied Geophysics*, 175, 3303-3324, 10.1007/s00024-017-1748-y.
- Caviezel, A., Schaffner, M., Cavigelli, L., Niklaus, P., **Bühler, Y.**, Bartelt, P., Magno, M., and Benini, L. (2018): Design and Evaluation of a Low-Power Sensor Device for Induced Rockfall Experiments, *IEEE Transactions on Instrumentation and Measurement*, 67, 767-779, 10.1109/TIM.2017.2770799.
- Lucas, C., Leinss, S., **Bühler, Y.**, Marino, A., and Hajnsek, I. (2017): Multipath Interferences in Ground-Based Radar Data: A Case Study, *Remote Sensing*, 9, 1260.
- Korzeniowska, K., **Y. Bühler**, M. Marty, and O. Korup (2017): Regional snow-avalanche detection using object-based image analysis of near-infrared aerial imagery, *Natural Hazards and Earth System Sciences*, 17(10), 1823-1836, doi:10.5194/nhess-17-1823-2017.
- Kenner, R., M. Phillips, C. Hauck, C. Hilbich, C. Mulsow, **Y. Bühler**, A. Stoffel, and M. Buchroithner (2017): New insights on permafrost genesis and conservation in talus slopes based on observations at Flüelapass, Eastern Switzerland, *Geomorphology*, 290, 101-113, doi:10.1016/j.geomorph.2017.04.011.
- Semakova, E., and **Y. Bühler** (2017): TerraSAR-X/TanDEM-X data for natural hazards research in mountainous regions of Uzbekistan, *Journal of Applied Remote Sensing*, 11(03), 1, doi:10.1117/1.JRS.11.036024.
- Wendeler, C., **Bühler, Y.**, Bartelt, P., Glover, J. and Luis, R. (2017): Application of three-dimensional rockfall modeling to rock-face, *Engineering, Geomechanics and Tunneling*, 10, 74 - 80.
- Bühler, Y.**, Adams, M., Bösch, R., and Stoffel, A. (2016): Mapping snow depth in alpine terrain with unmanned aerial systems (UASs): potential and limitations, *The Cryosphere*, 10, 1075-1088.
- Valero, C.V., Wever, N., **Bühler, Y.**, Stoffel, L., Margreth, S., and Bartelt, P., (2016): Modelling wet snow avalanche runout to assess road safety at a high-altitude mine in the central Andes. *Natural Hazards and Earth System Sciences*, 16, 11: 2303-2323.

- Phillips, M., Wolter, A., Lüthi, R., Amann, F., Kenner, R. and **Bühler, Y.** (2016): Rock slope failure in a recently deglaciated permafrost rock wall at Piz Kesch (Eastern Swiss Alps), February 2014. *Earth Surface Processes and Landforms*, doi:10.1002/esp.3992.
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- Dreier, L., **Bühler, Y.**, Dufour, F., Ginzler, C. & Bartelt, P. (2016): Comparison of simulated powder snow avalanche velocities, volumes and flow widths with photogrammetric measurements. *Annals of Glaciology*, 57, 371 - 381.
- Eckerstorfer, M., **Bühler, Y.**, Frauenfelder, R. and Malnes, E. (2016): Remote sensing of snow avalanches: Recent advances, potential, and limitations, *Cold Regions Science and Technology*, 121, 126-140.
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- Grünewald, T., **Bühler, Y.** & Lehning, M. (2014): Elevation dependency of mountain snow depth. *The Cryosphere*, 8, 2381 - 2394.
- Aydin, A., **Bühler, Y.**: Christen, M. & Gürer, I. (2014): Avalanche situation in Turkey and back calculation of selected events. *Natural Hazards and Earth System Sciences*, 14, 1145–1154.
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- Itten, K. I., Dell'Endice, F., Hueni, A., Kneubuhler, M., Schlaper, D., Odermatt, D., Seidel, F., Huber, S., Schopfer, J., Kellenberger, T., **Bühler, Y.**, D'Odorico, P., Nieke, J., Alberti, E. & Meuleman, K (2008): APEX - the Hyperspectral ESA Airborne Prism Experiment *Sensors*, 8, 6235-6259.

Further peer-reviewed publications and reports:

- Bühler, Y.**, Stoffel, A., Eberhard, L., Feuerstein, G.C., Lurati, D. and Guler, A., (2018): Drohneneinsatz für die Kartierung der Schneehöhenverteilung. Bündner Wald, 71(8).
- Mulsow, C., Kenner, R., **Bühler, Y.**, Stoffel, A. and Maas, H.G., (2018) Subaquatic Digital Elevation Models from Uav-Imagery. ISPRS - International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences, XLII-2: 739-744.
- Bühler, Y.**, Christen, M., Margreth, S., Stoffel, L., Schär, M., Stoffel, A., Bebi, P. and Marty, C., (2017): Vorprojekt Gefahrenhinweiskarte Lawinen Kanton Graubünden, WSL- Institut für Schnee- und Lawinenforschung SLF.
- Lucas, C., Hajnsek, I., Marino, A., & **Bühler, Y.**, (2016): Investigation of Snow Avalanches with Ground Based Ku-band Radar. In: EUSAR 2016. 11th European Conference on Synthetic

Aperture Radar. 06 - 09 June, 2016, Hamburg, Germany. Electronic Proceedings. Berlin, VDE. 519-522.

Adams, M.S., **Bühler, Y.**, Boesch, R., Fromm, R., Stoffel, A. & Ginzler, C. (2016): Investigating the Potential of Low-Cost Remotely Piloted Aerial Systems for Monitoring the Alpine Snow Cover (RPAS4SNOW). Final Project Report, ÖAW – Austrian Academy of Sciences, Innsbruck (Austria), pp. 82.

Boesch, R.; **Bühler, Y.**; Marty, M.; Ginzler, C., (2016): Comparison of digital surface models for snow depth mapping with UAV and aerial cameras. In: Halounova, L.; Á afár, V.; Raju, P.L.N.; Plánka, L.; Ádímal, V.; Srinivasa Kumar, T.; Faruque, F.S.; Kerr, Y.; Ramasamy, S.M.; Comiso, J.; Hussin, Y.A.; Thenkabail, P.S.; Lavender, S.; Skidmore, A.; Yue, P.; Patias, P.; Altan, O.; Weng, Q. (eds.) XXIII ISPRS Congress, Commission VIII. 12-19 July 2016, Prague, Czech Republic. Vol. XLI-B8. 453-458.

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Veitinger, J.; Sovilla, B.; **Bühler, Y.**, (2016): Assessing the effect of the winter terrain surface on simulations of avalanche scenarios. [Abstract] In: Koboltschnig, G. (ed) 13th Congress Interpraevent 2016. 30 May to 2 June 2016, Lucerne, Switzerland. Extended Abstracts. Living with natural risks. Luzern, International Research Society Interpraevent. 168-169.

Phillips, M.; Kos, A.; Amann, F.; Bonanomi, Y.; Huwiler, A.; Negrini, M.; Lüthi, R.; Kenner, R.; Wolter, A.; **Bühler, Y.**, (2016): Deep-seated rock slope failures in mountain permafrost: Pizzo Cengalo and Piz Kesch (Canton Grisons, Switzerland). [Abstract] In: Koboltschnig, G. (ed) 13th Congress Interpraevent 2016. 30 May to 2 June 2016, Lucerne, Switzerland. Extended Abstracts. Living with natural risks. Luzern, International Research Society Interpraevent. 148-149.

Bühler, Y. Bösch, R., Stoffel, A. & Adams, M. (2015): Geodatenerfassung im hochalpinen Gelände mittels Drohnen. *Geomatik Schweiz* 9/2015, 366 – 370.

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- Buehler, Y. A.**, Kellenberger, T. W., Small, D. & Itten, K. I. (2006): Rapid mapping with remote sensing data during flooding 2005 in Switzerland by object-based methods - a case study. In: Martin-Duque, J. F., Brebbia, C. A., Emmanouloudis, D. E. & Mander, U. (Eds.) *Geo Environment & Landscape Evolution II, WIT Press, WIT Transactions on Ecology and the Environment*, 391 – 400.
- Bühler, Y.**, Seidel, F. & Kellenberger, T. (2006): Schnelle Schadenskartierung mit Satellitendaten während den Überschwemmungen 2005 zur Unterstützung des Katastrophen-Managements, *Geomatik Schweiz* 9/2006: 494 – 497.

Conference papers and selected talks:

- Bühler, Y.** (2019): UAS based Snow Depth Mapping-The Wägital Case Study. Climate-Seminar, *MeteoSchweiz*, Zürich Flughafen, Switzerland, 17. 01. 2019.

- Bühler, Y.** (2019): Drohnen für die Forschung im Hochgebirge. *DCL Event, Galaaxy, Laax, Switzerland*, 29. 03. 2019.
- Bühler, Y.** (2018): Efficient geodata acquisition with AUS in alpine terrain. *WSL Applied Remote Sensing Lectures, SLF Davos, Switzerland*, 15. 11. 2018.
- Bühler, Y.**, von Rickenbach, D., Christen, M., Margreth, S., Stoffel, L., Stoffel, A. and Kühne, R., (2018): Linking modelled potential release areas with avalanche dynamic simulations: An automated approach for efficient avalanche hazard indication mapping, *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Eberhard, L., Marty, M., Stoffel, A., Kenner, R. and **Bühler, Y.**, (2018): Photogrammetric snow depth mapping: evaluation of different platforms and sensors, *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Eker, R., Aydın, A., **Bühler, Y.** and Stoffel, A., (2018): SfM-based 3D point clouds in determination of snow depth from high-resolution UAS data as alternative methods: Is it possible to use?, *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Harvey, S., Schudlach, G., **Bühler, Y.**, Dürr, L., Stoffel, A. and Christen, C., (2018): Avalanche terrain maps for backcountry skiing in switzerland, *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Maggioni, M., Bovet, E., Freppaz, M., Segor, V. and **Bühler, Y.**, (2018): Potential of automated avalanche dynamic simulations for large scale hazard indication mapping in italy: a first test application in aosta valley, *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Monti, F., Alberti, R., Comin, P., Wolynski, A. and **Bühler, Y.**, (2018): Automated identification of forest with protective function against snow avalanches in the Trento Province (Italy), *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Semakova, E., Safronov, V., Mamaraimov, A., Nurtaev, B., Semakov, S. and **Bühler, Y.**, (2018): Applying numerical snow avalanche simulations for hazard assessment in the Kamchik pass area, Uzbekistan, *International Snow Science Workshop ISSW, Innsbruck, Austria*.
- Bühler, Y.** (2018): Drones@SLF: efficient geodata acquisition in challenging terrain with Unmanned Aerial Systems (UASs). *SLF Kolloquium, SLF Davos, Switzerland*, 09. 11. 2018.
- Bühler, Y.** (2018): Mapping Snow Depth in Complex Terrain – How Good Can We Get? *European Space Agency ESA Eo4Alps Workshop, Innsbruck, Austria*, 27. 06. 2018.
- Bühler, Y.** (2018): Regional Scale Avalanche Hazard Mapping. *Academy of Science Uzbekistan, Tashkent, Uzbekistan*, 12. 04. 2018
- Bühler, Y.** (2018): Satellite based rapid mapping of snow avalanche activity. *Swisstopo Kolloquium, Wabern, Switzerland*, 23. 03. 2018.
- Bühler, Y.** (2018): Pilotprojekt Gefahrenhinweiskarte Kanton Graubünden. *Amt für Wald und Naturgefahren, Kanton Graubünden, Chur*, 30. 01. 2018
- Bühler, Y.**, Stoffel, A. and Jonas T (2018): Swiss experience in snow monitoring: research and operational products. *Workshop on the evolution of Copernicus snow and ice monitoring product. European Environmental Agency, Kopenhagen DK*, 25. 01. 2018
- Bühler, Y.**, Stoffel, A. and Ginzler, C. (2017): UAS applications in high alpine, snow-covered terrain. *AGU, New Orleans, USA*, 13. 12. 2017

- Bühler, Y.**, Stoffel, A. and Eberhard, L. (2017): UAS@SLF: Anwendung von Drohnen im hochalpinen Gebieten. *Einsatzleiterkurs Alpine Rettung Graubünden*, Thuisis, 28. 10. 2017.
- Bühler, Y.**, Christen, M., Caviezel, A., Lu, G. and Bartelt, P. (2017): Remote Sensing Tools for Numerical Rockfall Simulations. *GEO-SUMMIT 2017, Geobruigg*, Intercontinental Davos, 17. 10. 2017.
- Bühler, Y.**, Christen, M., Caviezel, A. and Bartelt, P. (2017): Digitale Geländemodelle als Basis für numerische Simulationen von alpinen Naturgefahren. *7. Wildbachworkshop Qualitätssicherung in der Anwendung digitaler Daten und Modellen*. Bregenz AT, 03 – 04. Oktober 2017.
- Bühler, Y.**, Christen, M., Margreth, S., Stoffel, L., Schär, M., Stoffel, A., Harvey, S., Schudlach, G., Bebi, P. and Marty, C. (2017): Regional Scale Avalanche Hazard Mapping, SLF-Kolloquium.
- Bühler, Y.** and Stoffel, A. (2017): UAS @ SLF – Applications of unmanned aerial systems in high alpine terrain. Faculty of Forestry, Department of Forest Engineering, Düzce University, Turkey.
- Bühler, Y.** and Stoffel, A. (2017): High spatial resolution mapping of the alpine snow cover. *Faculty of Forestry, Department of Forest Engineering*, Düzce University, Turkey.
- Bühler, Y.**, Adams, M., Stoffel, A. and Bösch, R. (2017): Snow Depth Mapping Applying Unmanned Aerial Systems – Closing the Gap Between Field Measurements and Low Spatial Resolution Satellite Data. *8th EARSeL workshop on Land Ice and Snow*, Special Interest Group of Land Ice and Snow. University of Bern, Bern, Switzerland.
- Bühler, Y.**, Stoffel, A., Marty, M., Bösch, R. and Ginzler, C. (2016): UAS applications on snow in high alpine terrain. *Small UAS for Environmental Research Conference*, University of Worcester, Worcester, UK.
- Bühler, Y.**, Stoffel, A., Adams, M., Bösch, R., and Ginzler, C. (2016): UAS Photogrammetry of Homogenous Snow Cover, *Dreiländertagung der DGPF, der OVG und der SGPF*, Bern, Switzerland, 306 - 316.
- Bühler, Y.**, Stoffel, A., Marty, M., Bösch, R. and Ginzler, C. (2015): High spatial resolution mapping of alpine snow depth variability. *WSL/SLF Applied Remote Sensing Lectures*, SLF Davos Switzerland.
- Bühler, Y.**, Stoffel, A., Bösch, R. and Ginzler, C. (2015): Efficient geo-data acquisition in high alpine terrain using UAS. *Der Alpenraum und seine Herausforderungen im Bereich Orientierung, Navigation und Informationsaustausch AHORN, Wildhaus SG*, Switzerland.
- Bühler, Y.** and Kenner, R. (2015): Monitoring of mass movements in high alpine areas using LiDAR. *WSL/SLF Applied Remote Sensing Lectures*, WSL Birmensdorf, Switzerland.
- Bühler, Y.**, Bieler, C., Pielmeier, C., Wiesmann, A., Caduff, R., Frauenfelder, R., Jaedicke, C. & Bippus, G. (2014): All-weather avalanche activity monitoring from space? *International Snow Science Workshop ISSW*, Banff, AB, Canada.
- Bühler, Y.**, Christen, M., Dreier, L., Feistl, T. & Bartelt, P. (2014): Merging of recent developments in avalanche simulation technology into practice. *International Snow Science Workshop ISSW*, Banff, AB, Canada.
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