

Publication list Yves Bühler

Peer-reviewed WoS publications:

- Hafner, E. D., Techel, F., Leinss, S., and **Bühler, Y.** (2021): Mapping avalanches with satellites – evaluation of performance and completeness, *The Cryosphere*, 2020, 1-31, 10.5194/tc-2020-272, (accepted).
- Helbig, N., **Bühler, Y.**, Eberhard, L., Deschamps-Berger, C., Gascoin, S., Dumont, M., Revuelto, J., Deems, J. S., and Jonas, T. (2021): Fractional snow-covered area: scale-independent peak of winter parameterization, *The Cryosphere*, 15, 615-632, 10.5194/tc-15-615-2021.
- Eberhard, L. A., Sirguey, P., Miller, A., Marty, M., Schindler, K., Stoffel, A., and **Bühler, Y.** (2021): Intercomparison of photogrammetric platforms for spatially continuous snow depth mapping, *The Cryosphere*, 15, 69-94, 10.5194/tc-15-69-2021.
- Leinss, S., Wicki, R., Holenstein, S., Baffelli, S., and **Bühler, Y.** (2020): Snow avalanche detection and mapping in multitemporal and multiorbital radar images from TerraSAR-X and Sentinel-1, *Natural Hazards Earth System Sciences*, 20, 1783-1803, 10.5194/nhess-20-1783-2020.
- Walter, B., Huwald, H., Gehring, J., **Bühler, Y.**, and Lehning, M. (2020): Radar measurements of blowing snow off a mountain ridge, *The Cryosphere*, 14, 1779-1794, 10.5194/tc-14-1779-2020.
- Krasilnikov, S. S., Kuzmin, R. O., **Bühler, Y.**, and Zabalueva, E. V. (2020): Formation of long-distance water ice avalanches on mars, *Planetary and Space Science*, 186, 10.1016/j.pss.2020.104917.
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- Caviezel, A., Demmel, S. E., Ringenbach, A., **Bühler, Y.**, Lu, G., Christen, M., Dinneen, C. E., Eberhard, L. A., von Rickenbach, D., and Bartelt, P. (2019): Reconstruction of four-dimensional rockfall trajectories using remote sensing and rock-based accelerometers and gyroscopes, *Earth Surface Dynamics*, 7, 199-210, 10.5194/esurf-7-199-2019.
- Lu, G., Caviezel, A., Christen, M., Demmel, S. E., Ringenbach, A., **Bühler, Y.**, Dinneen, C. E., Gerber, W., and Bartelt, P. (2019): Modelling rockfall impact with scarring in compactable soils, *Landslides*, 10.1007/s10346-019-01238-z.
- 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
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- 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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- Bühler, Y.**, Marty, M., Egli, L., Veitinger, J., Jonas, T., Thee, P. & Ginzler, C. (2015): Spatially continuous mapping of snow depth in high alpine catchments using digital photogrammetry. *The Cryosphere*, 9 (1), 229 – 243.
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- Bartelt, P., Buser, O., **Bühler, Y.**, Dreier, L. & Christen, M. (2014): Numerical simulation of snow avalanches: Modelling dilatative processes with cohesion in rapid granular shear flows. *Numerical Methods in Geotechnical Engineering – Hicks, Brinkgreve & Rohe (Eds)*. 2014 Taylor & Francis Group, London, 978-1-138-00146-6.
- Feistl, T., **Bühler, Y.**, Christen, M., Bebi, P., Teich, M. Thuro, K., Bartelt, P. (2014): Observations and modeling of the breaking effect of forests on snow avalanche flow. *Journal of Glaciology*, 60 (209), 124 - 138.
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Further peer-reviewed publications and reports:

- Leiterer, R., Wulf, H., G., M., Sassik, B., **Bühler, Y.**, and Wegner, J. D. (2020): Schneekartierung aus dem All – das Potenzial frei verfügbarer Satellitendaten, *Wasser Energie Luft*, 112, 4.
- Noetzli, C., **Bühler, Y.**, Lorenzi, D., Stoffel, A., and Rohrer, M. (2019): Schneedecke als Wasserspeicher - Drohnen können helfen, die Abschätzungen der Schneereserven zu verbessern, *Wasser, Energie, Luft*, 111, 2019.
- 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,

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- Caduff, R.; Wiesmann, A.; **Bühler, Y.**; Bieler, C.; Limpach, P., (2016): Terrestrial radar interferometry for snow glide activity monitoring and its potential as precursor of wet snow avalanches. In: Koboltschnig, G. (ed) 13th Congress Interpraevent 2016. 30 May to 2 June 2016, Lucerne, Switzerland. Conference Proceedings. Living with natural risks. Luzern, International Research Society Interpraevent. 239-248.
- Stoffel, L.; Margreth, S.; Schaer, M.; Christen, M.; **Bühler, Y.**; Bartelt, P., (2016): Powder Snow Avalanche Engineering: New Methods to Calculate Air-Blast Pressures for Hazard Mapping. In: Koboltschnig, G. (ed) 13th Congress Interpraevent 2016. 30 May to 2 June 2016, Lucerne, Switzerland. Conference Proceedings. Living with natural risks. Luzern, International Research Society Interpraevent. 416-425.
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- Chrustek, P., Kolecka, N. & **Bühler, Y.** (2013): Using high resolution LiDAR data for snow avalanche hazard mapping. In: Kozak J., Ostapowicz K., Bytnerowicz A., Wyżga B. (Eds.) *Integrating Nature and Society towards Sustainability Integrating Nature and Society towards Sustainability*, Springer, pp. 597 – 613, ISBN 978-3-642-12724-3.

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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.** (2020): Automatisch generierte Gefahrenhinweiskarte Lawinen Kanton Graubünden *Gefahrenkommission, Amt für Wald und Naturgefahren, Kanton Graubünden, Chur, Switzerland*, Talk 12. 06. 2020.
- Ringenbach, A., Caviezel, A., Demmel, S. E., Lu, G., **Bühler, Y.**, Christen, M., Bartelt, P., and Meier, L. (2020): Three-dimensional trajectory reconstruction of induced single block Rockfall experiments, *Rock Mechanics for Natural Resources and Infrastructure Development- Proceedings of the 14th International Congress on Rock Mechanics and Rock Engineering, ISRM 2019, 2887-2894*.
- Bühler, Y.** (2019): Efficient geodata acquisition in alpine terrain with optical Remote Sensing *Seminar School of Surveying, University of Otago, Dunedin, New Zealand*, Talk 15. 08. 2019.

- Bühler, Y.** (2019): UAS based Snow Depth Mapping-The Wägital Case Study. Climate-Seminar, *MeteoSchweiz*, Zürich Flughafen, Switzerland, Talk 17. 01. 2019.
- Bühler, Y.** (2019): Drohnen für die Forschung im Hochgebirge. *DCL Event*, Galaaxy, Laax, Switzerland, Talk 29. 03. 2019.
- Bühler, Y.** (2018): Efficient geodata acquisition with AUS in alpine terrain. *WSL Applied Remote Sensing Lectures*, SLF Davos, Switzerland, Talk 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., Schmudlach, 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, Talk 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, Talk 27. 06. 2018.
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