

## Publication list Yves Bühler

### **Peer-reviewed ISI publications:**

- Hafner, E. D., Techel, F., Daudt, R. C., Wegner, J. D., Schindler, K., and **Bühler, Y.** (2023): Avalanche size estimation and avalanche outline determination by experts: reliability and implications for practice, *Natural Hazards and Earth System Sciences*, 23, 2895-2914, 10.5194/nhess-23-2895-2023.
- Bührle, L. J., Marty, M., Eberhard, L. A., Stoffel, A., Hafner, E. D., and **Bühler, Y.** (2023): Spatially continuous snow depth mapping by aeroplane photogrammetry for annual peak of winter from 2017 to 2021 in open areas, *The Cryosphere*, 17, 3383-3408, 10.5194/tc-17-3383-2023.
- Ortner, G., Bründl, M., Kropf, C. M., Rösli, T., **Bühler, Y.**, and Bresch, D. N. (2023): Large-scale risk assessment on snow avalanche hazard in alpine regions, *Natural Hazards and Earth System Sciences*, 23, 2089-2110, 10.5194/nhess-23-2089-2023.
- Ringebach, A., Bebi, P., Bartelt, P., Rigling, A., Christen, M., **Bühler, Y.**, Stoffel, A., and Caviezel, A. (2023): Shape still matters: rockfall interactions with trees and deadwood in a mountain forest uncover a new facet of rock shape dependency, *Earth Surface Dynamics*, 11, 779-801, 10.5194/esurf-11-779-2023.
- Miller, A. D., Redpath, T. A. N., Sirguey, P., Cox, S. C., Bartelt, P., Bogie, D., Conway, J. P., Cullen, N. J., and **Bühler, Y.** (2023): Unprecedented Winter Rainfall Initiates Large Snow Avalanche and Mass Movement Cycle in New Zealand's Southern Alps/Kā Tiritiri o te Moana, *Geophysical Research Letters*, 50, 10.1029/2022gl102105.
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- Toft, H. B., Müller, K., Hendriks, J., Jaedicke, C., and **Bühler, Y.** (2023): Can big data and random forests improve avalanche runout estimation compared to simple linear regression? *Cold Regions Science and Technology*, 211, 103844.
- Daudt, R. C., Wulf, H., Hafner, E. D., **Bühler, Y.**, Schindler, K., and Wegner, J. D. (2023): Snow depth estimation at country-scale with high spatial and temporal resolution, *ISPRS Journal of Photogrammetry and Remote Sensing*, 197, 105-121.
- Bühler, Y.**, Bebi, P., Christen, M., Margreth, S., Stoffel, L., Stoffel, A., Marty, C., Schmucki, G., Caviezel, A., Kühne, R., Wohlwend, S., and Bartelt, P. (2022): Automated avalanche hazard indication mapping on a statewide scale, *Natural Hazards Earth System Sciences*, 22, 1825-1843, 10.5194/nhess-22-1825-2022.
- Ringebach, A., Bebi, P., Bartelt, P., Rigling, A., Christen, M., **Bühler, Y.**, Stoffel, A., and Caviezel, A. (2022): Modeling deadwood for rockfall mitigation assessments in windthrow areas, *Earth Surface Dynamics*, 10, 1303-1319, 10.5194/esurf-10-1303-2022.
- Sykes, J., Haegeli, P., and **Bühler, Y.** (2022): Automated snow avalanche release area delineation in data-sparse, remote, and forested regions, *Natural Hazards and Earth System Sciences*, 22, 3247-3270, 10.5194/nhess-22-3247-2022.
- Miller, A., Sirguey, P., Morris, S., Bartelt, P., Cullen, N., Redpath, T., Thompson, K., and **Bühler, Y.** (2022): The impact of terrain model source and resolution on snow avalanche modeling, *Natural Hazards and Earth System Sciences*, 22, 2673-2701, 10.5194/nhess-22-2673-2022.

- Hafner, E. D., Barton, P., Daudt, R. C., Wegner, J. D., Schindler, K., and **Bühler, Y.** (2022): Automated avalanche mapping from SPOT 6/7 satellite imagery with deep learning: results, evaluation, potential and limitations, *The Cryosphere*, 16, 3517-3530, 10.5194/tc-16-3517-2.
- Ringebach, A., Stihl, E., **Bühler, Y.**, Bebi, P., Bartelt, P., Rigling, A., Christen, M., Lu, G., Stoffel, A., Kistler, M., Degonda, S., Simmler, K., Mader, D., and Caviezel, A. (2022): Full-scale experiments to examine the role of deadwood in rockfall dynamics in forests, *Natural Hazards and Earth System Sciences*, 22, 2433-2443, 10.5194/nhess-22-2433-2022.
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- Hafner, E. D., Techel, F., Leinss, S., and **Bühler, Y.** (2021): Mapping avalanches with satellites – evaluation of performance and completeness, *The Cryosphere*, 15, 983-1004, 10.5194/tc-15-983-2021.
- Helbig, N., **Bühler, Y.**, Eberhard, L., Deschamps-Berger, C., Gascoïn, 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.
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### **Outreach publications and reports:**

- Bühler, Y.**, Stoffel, A., Eberhard, L., and Bührle, L.: Fotogrammetrische Schneehöhenkartierung aus Drohnen-, Flugzeug- und Satellitenbildern, *Forum für Wissen 2023*. Neue Fernerkundungstechnologien für die Umweltforschung und Praxis., WSL Birmensdorf, doi.org/10.55419/wsl:33072.
- Glaus, J., Jones, K. W., **Bühler, Y.**, Christen, M., Ruttner-Jansen, P., Gaume, J., and Bartelt, P.(2023): RAMMS::EXTENDED - SENSITIVITY ANALYSIS OF NUMERICAL FLUIDIZED POWDER AVALANCHE SIMULATION IN THREE-DIMENSIONAL TERRAIN, *International Snow Science Workshop ISSW*, Bend, Oregon, USA2023.
- Ruttner-Jansen, P., Glaus, J., Wieser, A., and **Bühler, Y.** (2023): A MEASUREMENT SYSTEM FOR MAPPING SNOW DISTRIBUTION CHANGES IN AN AVALANCHE RELEASE ZONE, *International Snow Science Workshop ISSW*, Bend, Oregon, USA2023.
- Marshall, H. P. and **Bühler, Y.** (2023): AIRBORNE AND SPACEBORNE SNOW REMOTE SENSING WITH OPTICAL AND MICROWAVE SENSORS: A REVIEW OF CURRENT APPROACHES

AND FUTURE OUTLOOK FOR AVALANCHE APPLICATIONS, *International Snow Science Workshop ISSW*, Bend, Oregon, USA2023.

- Jones, K. W., Wolken, G., McKee, M., Bartelt, P., **Bühler, Y.**, and Christen, M.(2023): USING SNOW REMOTE SENSING AND AVALANCHE SIMULATIONS TO INFORM THE PLACEMENT OF REMOTE AVALANCHE CONTROL SYSTEMS, *International Snow Science Workshop ISSW*, Bend, Oregon, USA2023.
- Sykes, J., Haegeli, P., Atkins, R., Mair, P., and **Bühler, Y.** (2023): QUANTITATIVELY CAPTURING DECISION-MAKING PRACTICES OF MECHANIZED SKI GUIDES USING GPS TRACKING, AVALANCHE TERRAIN MODELING AND BAYESIAN NETWORKS, *International Snow Science Workshop ISSW*, Bend, Oregon, USA2023.
- Dasser, G., Munch, J., **Bühler, Y.**, Bartelt, P., and Manconi, A. (2023): Applied space-borne remote sensing to identify mass movements and the exemplary modelling of potentially catastrophic failures in the Bhagirathi Area, India, *43. Jahrestagung der DGPF*, München, Germany.
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- Bühler, Y.**, Bebi, P., Christen, C., Margreth, S., Stoffel, A., Stoffel, L., Marty, C., Bartelt, P., and Kühne, R. (2022): Automatisch berechnete Gefahrenhinweiskarten für Lawinen, *Wildbach- und Lawinenverbau*, Naturgefahren im Klimawandel, 86, 88 - 95.
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- Bühler, Y.**, Bührle, L., Eberhard, L., Marty, M. und Stoffel, A. (2021): Grossflächige Schneehöhen-Kartierung mit Flugzeug und Satellit, *Geomatik Schweiz*. 9/2021, 20 – 23.
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- Bühler, Y.** Alpine Environment and Natural Hazards, *GIUZ Drone Workshop*. Department of Geography, University of Zurich, Switzerland, Talk 08. 06. 2022.



- Bühler, Y.** Remote Sensing and Hazard Indication Mapping of Alpine Hazards @ SLF. Exkursion Fachhochschule Graubünden, Photonics as SLF, SLF Switzerland, Talk 27. 05. 2022.
- Bühler, Y.** Drones for Alpine hazard assessment. *Dialog WSL ETH Rat*, EMPA, Switzerland, Talk 13. 04. 2022.
- Bühler, Y.** (2021): Remote sensing tools for mountain risk monitoring and mitigation, *Workshop on Climate Change and Mountain Risks in the European Alps - from Recognition to Management*, Saas Fee, Switzerland, Talk 26. 08. 2021.
- Bühler, Y.** (2021): Remote sensing for snow and avalanche research, *IGS seminar online*, , Talk 07. 07. 2021.
- Bühler, Y.** (2020): AUS applications @SLF, Visit of the *Wingtra software development group* at SLF, Talk 11. 09. 2020.
- Bühler, Y.** (2020): Avalanches down under – research exchange in New Zealand, *SLF Kolloquium*, Talk 30. 06. 2020.
- Bühler, Y.** (2020): Automatisch generierte Gefahrenhinweiskarte Lawinen Kanton Graubünden *Gefahrenkommission, Amt für Wald und Naturgefahren, Kanton Graubünden*, Chur, Switzerland, Talk 12. 06. 2020.
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## **Thesis:**

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**Bühler, Y.** (2003): Change Detection Nordostschweiz. Diplomarbeit. Geographisches Institut, Universität Zürich (Master Thesis).

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