Jan-Christoph Otto
Assoziierte(r) Professor/in
Umwelt und Biodiversität
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Forschungsgebiete

Changes of high mountain landscapes manifested through landform changes, dynamic sediment movements and the related consequences for society are a focus in my scientific work. In my research I combine geomorphological quantitative and qualitative field methods with shallow geophysics and GIS and remote sensing analysis. My teaching activites include various field and lab courses on geomorphological and geological techniques and GIS applications in geomorphology, lectures on geomorphology, natural hazards and risks and field trips.

Organisationszugehörigkeiten

Assoziierte(r) Professor/in
Umwelt und Biodiversität
Paris Lodron Universität Salzburg
Salzburg, Österreich
1 Juli 2022 → present

Publikationen

Sediment transfer system in a deglaciating alpine catchment – insights from the Habach valley, Austria
Dietel, S., Robl, J. & Otto, J.-C., 31 Dez. 2026, in: Journal of Maps. 22, 1, 2718101.

On thin glacial ice: New Austrian Glacier Inventory shows accelerating glacier shrinkage and 31 % area loss within two decades
Hartl, L., Abermann, J., Akgun, A., Bertolotti, G., Bolch, T., Conzelmann, S., Diaconu, C.-A., Hansche, I., Hartig, A., Haut, A., Helfricht, K., Hynek, B., Kaucher, M. S., Kellerer-Pirklbauer, A., Kogel, A. C., Krippes, J., Lauria, M. V., Mayer, C., Otto, J.-C. & Prinz, R. &9 mehr, Prolss, S., Rieg, L., Schonleber, L., Schwaizer, G., Seiser, B., Stocker-Waldhuber, M., Strudl, M., Verhounik, M. & Zandler, H., 14 Sept. 2026, in: CRYOSPHERE. 20, 9, S. 5157-5180 24 S.

Quaternary terrace formation in response to climate, regional uplift and local normal faulting: The Danube terrace staircase of Vienna
Salcher, B. C., Neuhuber, S. M., Otto, J. C., Payer, T., Luthgens, C., Fuchs, S., Flores-Orozco, A., Norgaard, J., Grupe, S., Marchhart, O., Wieser, A., Lachner, J., Fiebig, M. & Ruszkiczay-Rudiger, Z., 1 Feb. 2026, in: Quaternary Science Reviews. 373, 373, 17 S., 109709.

Middle to Late Pleistocene landscape evolution and glacial dynamics in the Eastern Alps: the Gröbminger Mitterberg record, Austria
Griesmeier, G., Le Heron, D., Lüthgens, C., Firla, G., Salcher, B., Dremel, F. C., Otto, J.-C. & Reitner, J., 30 Nov. 2025, in: Boreas.

Long-term occupation of bofedales ecosystems by high-Andean hunter-gatherers in the Dry Puna, northern Chile
Sitzia, L., Osorio, D., Garcia, B. M., Otto, J.-C., Power, X., Gayo, E. M., Borie, C., Gallardo, M. & Uribe, C., 27 Nov. 2024, in: Antiquity. 2025, 99(404), 8 S.

Geomorphology of the Caracota Valley, Western Altiplano, Northern Chile
Otto, J. C., Gallardo, M., Sitzia, L., Osorio, D. & Gayo, E. M., 23 Sept. 2024, in: Journal of Maps. 20, 1, 2399948.

Structural shifts in plant functional diversity during biogeomorphic succession: Moving beyond taxonomic investigations in an alpine glacier foreland

Haselberger, S., Junker, R. R., Ohler, L. M., Otto, J. C. & Kraushaar, S., 30 Juni 2024, in: EARTH SURFACE PROCESSES AND LANDFORMS. 49, 8, S. 2458-2474 17 S.

Reconstruction of glaciers in the western boundary of the Altiplano (18.5°-19°S), Singularities and insights on potential drivers of past advances
Gallardo, M., Otto, J. C., Gayo, E. M. & Sitzia, L., Jan. 2024, in: Quaternary Science Advances. 13, 100158.

Catchment-scale patterns of geomorphic activity and vegetation distribution in an alpine glacier foreland (Kaunertal Valley, Austria)
Haselberger, S., Scheper, S., Otto, J. C., Zangerl, U., Ohler, L. M., Junker, R. R. & Kraushaar, S., Nov. 2023, in: Frontiers in Earth Science. 11, 11, 1280375.

Proglacial slopes are protected against erosion by trait diverse and dense plant communities associated with specific microbial communities
Ohler, L. M., Haselberger, S., Janssen, S., Otto, J. C., Kraushaar, S. & Junker, R. R., Sept. 2023, in: Basic and Applied Ecology. 71, S. 57-71 15 S.

The Development of Limestone Weathering Rind in a Proglacial Environment of the Hallstätter Glacier
Dąbski, M., Badura, I., Kycko, M., Grabarczyk, A., Matlakowska, R. & Otto, J. C., Apr. 2023, in: Minerals. 13, 4, 530.

Efficient geomorphological mapping based on geographic information systems and remote sensing data: an example from Jena, Germany
Zangana, I., Otto, J. C., Mäusbacher, R. & Schrott, L., 2023, in: Journal of Maps. 19, 1, S. 1-13 13 S., 2172468.

Testing the performance of ice thickness models to estimate the formation of potential future glacial lakes in Austria
Otto, J. C., Helfricht, K., Prasicek, G., Binder, D. & Keuschnig, M., 15 März 2022, in: EARTH SURFACE PROCESSES AND LANDFORMS. 47, 3, S. 723-741 19 S.

Divergent assembly processes? A comparison of the plant and soil microbiome with plant communities in a glacier forefield
Junker, R. R., He, X., Otto, J.-C., Ruiz-Hernández, V. & Hanusch, M., 1 Okt. 2021, in: FEMS MICROBIOLOGY ECOLOGY. 97, 10, fiab135.

Risk management in the 21st century - Nature-based solutions in natural hazard prevention
Otto, J. C. & Kraushaar, S., 1 Juli 2021, in: Geographische Rundschau. 73, 7-8, S. 32-36 5 S.

Evolution of debris cover on glaciers of the Eastern Alps, Austria, between 1996 and 2015
Fleischer, F., Otto, J. C., Junker, R. R. & Hölbling, D., 2021, in: Earth Surface Processes and Landforms. 46, 9, S. 1673-1691 19 S.

A 6-year lidar survey reveals enhanced rockwall retreat and modified rockfall magnitudes/frequencies in deglaciating cirques
Hartmeyer, I., Keuschnig, M., Delleske, R., Krautblatter, M., Lang, A., Schrott, L., Prasicek, G. & Otto, J.-C., 11 Sept. 2020 , in: Earth Surface Dynamics. 8, 3, S. 753–768 16 S.

Current glacier recession causes significant rockfall increase: the immediate paraglacial response of deglaciating cirque walls
Hartmeyer, I., Delleske, R., Keuschnig, M., Krautblatter, M., Lang, A., Schrott, L. & Otto, J.-C., 11 Sept. 2020, in: EARTH SURFACE DYNAMICS. 8, 3, S. 729–751 23 S.

Ödenwinkel: an Alpine platform for observational and experimental research on the emergence of multidiversity and ecosystem complexity
Junker, R. R., Hanusch, M., He, X., Ruiz-Hernández, V., Otto, J.-C., Kraushaar, S., Bauch, K., Griessenberger, F., Ohler, L.-M. & Trutschnig, W., 19 Aug. 2020, in: Web Ecology. 2020, 2, S. 95–106 12 S.

Calibrated Ice Thickness Estimate for All Glaciers in Austria
Helfricht, K., Huss, M., Fischer, A. & Otto, J.-C., 18 Apr. 2019, in: Frontiers in Earth Science. 7, 15 S., 68.

Fracture dynamics in an unstable, deglaciating headwall, Kitzsteinhorn, Austria
Ewald, A., Hartmeyer, I., Keuschnig, M., Lang, A. & Otto, J.-C., 15 Apr. 2019, in: Cryosphere Discussions. S. 1-25 25 S.

Micro-weathering of limestone surfaces in a foreland of Hallstätter Glacier (Dachstein, Austria)
Dąbski, M., Woronko, B., Fabijańska, P. & Otto, J. C., 1 Jan. 2019, in: Geografiska Annaler, Series A: Physical Geography. 101, 3, S. 277-292 16 S.

Natural hazards in alpine permafrost regions and permafrost monitoring
Otto, J. C., Hartmeyer, I. & Keuschnig, M., 1 Nov. 2018, in: Geographische Rundschau. 70, 11, S. 30-35 6 S.

Linking rock weathering, rockwall instability and rockfall supply on talus slopes in glaciated hanging valleys (Swiss Alps)
Messenzehl, K., Viles, H., Otto, J. C., Ewald, A. & Dikau, R., 1 Juli 2018, in: PERMAFROST AND PERIGLACIAL PROCESSES. 29, 3, S. 135-151 17 S.

Glacial lakes in Austria - Distribution and formation since the Little Ice Age
Buckel, J. W., Otto, J.-C., Prasicek, G. & Keuschnig, M., 2018, in: Global and Planetary Change. 164, S. 39-51 12 S.

Naturgefahren in alpinen Permafrostregionen und Permafrostmonitoring
Otto, J.-C., Hartmeyer, I. & Keuschnig, M., 2018, in: Geographische Rundschau. S. 30-35

Regional-scale controls on the spatial activity of rockfalls (Turtmann Valley, Swiss Alps) - A multivariate modeling approach
Messenzehl, K., Meyer, H., Otto, J. C., Hoffmann, T. & Dikau, R., 15 Juni 2017, in: Geomorphology. 287, S. 29-45 17 S.

Glaciated valleys in Europe and western Asia
Prasicek, G., Otto, J. C., Montgomery, D. R. & Schrott, L., 1 Jan. 2015, in: Journal of Maps. 11, 2, S. 361-370 10 S.

Methodische Potentiale der modernen Geomorphologie für die Analyse, Quantifizierung und Rekonstruktion von Erdoberflächenprozessen
Götz, J., Otto, J.-C., Salcher B, B. J., Salcher, B., Buckel, J. W. & Otto, J.-C., 2015, in: GW-Unterricht. S. 5-26 21 S.

An Undercooled Scree Slope Detected by Geophysical Investigations in Sporadic Permafrost below 1000 M ASL, Central Austria
Stiegler, C., Rode, M., Sass, O. & Otto, J. C., 1 Juli 2014, in: Permafrost and Periglacial Processes. 25, 3, S. 194-207 14 S.

Multi-scale curvature for automated identification of glaciated mountain landscapes
Prasicek, G., Otto, J. C., Montgomery, D. R. & Schrott, L., 15 März 2014, in: Geomorphology. 209, S. 53-65 13 S.

Postglacial sediment storage and rockwall retreat in a semi-closed inner-alpine sedimentary basin (Gradenmoos, Hohe Tauern, Austria)
Götz, J., Otto, J. C. & Schrott, L., 23 Sept. 2013, in: Geografia Fisica e Dinamica Quaternaria. 36, 1, S. 63-80 18 S.

Sediment discharge from the proglacial zone of a retreating Alpine glacier
Geilhausen, M., Morche, D., Otto, J.-C. & Schrott, L., 2013, in: Zeitschrift für Geomorphologie / Supplementary Issues. S. 29-53

Spatial distribution of sediment storage types in two glacier landsystems (Pasterze & Obersulzbachkees, Hohe Tauern, Austria)

Geilhausen, M., Otto, J. C. & Schrott, L., 28 Dez. 2012, in: Journal of Maps. 8, 3, S. 242-259 18 S.

Spatial patterns of permafrost at hoher sonnblick (Austrian Alps) - Extensive field-measurements and modelling approaches
Schöner, W., Boeckli, L., Hausmann, H., Otto, J. C., Reisenhofer, S., Riedl, C. & Seren, S., 1 Dez. 2012, in: Austrian Journal of Earth Sciences. 105, 2, S. 154-168 15 S.

Detection of mountain permafrost by combining high resolution surface and subsurface information - an example from the glatzbach catchment, austrian alps
Otto, J. C., Keuschnig, M., Götz, J., Marbach, M. & Schrott, L., 1 März 2012, in: Geografiska Annaler, Series A: Physical Geography. 94, 1, S. 43-57 15 S.

Deepening of inner gorges through subglacial meltwater - An example from the UNESCO Entlebuch area, Switzerland
Dürst Stucki, M., Schlunegger, F., Christener, F., Otto, J. C. & Götz, J., 15 Feb. 2012, in: Geomorphology. 139-140, S. 506-517 12 S.

The global sediment budgets in cold environments (SEDIBUD) programme: Coordinated studies of sedimentary fluxes and budgets in changing cold environments
Beylich, A. A., Decaulne, A., Dixon, J. C., Lamoureux, S. F., Orwin, J. F., Otto, J. C., Overeem, I., Sæmundsson, P., Warburton, J. & Zwolinski, Z., 1 Jan. 2012, in: Zeitschrift fur Geomorphologie. 56, SUPPL. 1, S. 3-8 6 S.

Modelling alpine permafrost distribution in the Hohe Tauern region, Austria
Schrott, L., Otto, J.-C. & Keller, F., 2012, in: Austrian Journal of Earth Sciences. S. 169-183

Sediment discharge from the proglacial zone of a retreating Alpine glacier (Obersulzbachkees, Hohe Tauern, Austria)
Geilhausen, M., D, M., J-C, O., Schrott, L. & Otto, J.-C., 2012, in: Zeitschrift für Geomorphologie / Supplementary Issues.

Quantifizierung von rezenten und postglazialen Sedimentflüssen in den Ostalpen
J, C. O., Schrott, L. & Otto, J.-C., 2010, in: Salzburger Geographische Arbeiten. 110 S.

Quantifying sediment storage in a high alpine valley (Turtmanntal, Switzerland)
Otto, J. C., Schrott, L., Jaboyedoff, M. & Dikau, R., 1 Okt. 2009, in: Earth Surface Processes and Landforms. 34, 13, S. 1726-1742 17 S.

Landform - Structure, Evolution, Process Control: Proceedings of the International Symposium on Landform organised by the Research Training Group 437
Otto, J. C. (Co-Editor/in), Dikau, R. (Co-Editor/in) & Otto, J.-C. (Co-Editor/in), 2009, Heidelberg: Springer Verlag. 285 S. (Lecture Notes in Earth Sciences)

Quantifiying sediment storage in a high alpine valley (Turtmanntal, Switzerland)
Otto, J. C., Dikau, R., Otto, J.-C. & Schrott, L., 2009, in: EARTH SURFACE PROCESSES AND LANDFORMS. S. 1726-1742

HRSC-A data: A new high-resolution data set with multipurpose applications in physical geography
Otto, J. C., Kleinod, K., König, O., Krautblatter, M., Nyenhuis, M., Roer, I., Schneider, M., Schreiner, B. & Dikau, R., Apr. 2007, in: Progress in Physical Geography. 31, 2, S. 179-197 19 S.

HRSC-A data: a new high-resolution data set with multi-purpose applications in physical geography
J-COtto, K. K., Dikau, R. & Otto, J.-C., 2007, in: Progress in Physical Geography. S. 179-197

Comparing geophysical methods for talus slope investigations in the Turtmann valley (Swiss Alps)
Otto, J. C. & Sass, O., 30 Juni 2006, in: Geomorphology. 76, 3-4, S. 257-272 16 S.

Geomorphologic System Analysis of a High Mountain Valley in the Swiss Alps
Otto, J. C. & Dikau, R., 1 Sept. 2004, in: Zeitschrift fur Geomorphologie. 48, 3, S. 323-341 19 S.

Projects/Portal

Alpine geo- and biodiversity during environmental changes (AlpsChange)
Dötterl, S. (Projektleitung), Apfelbeck, B. A. (Projektmitarbeiter/in), Eberle, J. (Projektmitarbeiter/in), Habel, J. C. (Projektmitarbeiter/in), von Hagke, C. (Projektmitarbeiter/in), Hörger, A. (Projektmitarbeiter/in), Lang, A. (Projektmitarbeiter/in), Otto, J.-C. (Projektmitarbeiter/in), Petermann, J. (Projektmitarbeiter/in), Robl, J. C. (Projektmitarbeiter/in), Salcher, B. (Projektmitarbeiter/in), Tribsch, A. (Projektmitarbeiter/in), Grießinger, J. (Projektmitarbeiter/in), Hilberg, S. (Projektmitarbeiter/in), Knoll, M. (Projektmitarbeiter/in), Antenhofer, C. (Projektmitarbeiter/in), Meier, W.J.-H. (Projektmitarbeiter/in), Boekhout, F. (Projektmitarbeiter/in) & Gross, K. (Projektmitarbeiter/in)
1/10/25 → 30/09/29

RIMES: Climate Change and Natural Hazard Risk Management in Energy Systems
Otto, J.-C. (Projektleitung) & Schrott, L. (Projektmitarbeiter/in)
1/08/11 → 28/02/12

CLIMB: Climate Impacts on sediment dynamics in Mountain-river Basins
Otto, J.-C. (Projektleitung), Lang, A. (Projektmitarbeiter/in), Eibl, H. E. (Projektmitarbeiter/in), Robl, J. C. (Projektmitarbeiter/in) & Tenczer, V. (Projektmitarbeiter/in)
1/10/24 → 31/03/28

Geo_Salzburg2026: FFG Schülerpraktikant Geo_2026
Otto, J.-C. (Projektleitung) & Oswald, C. S. (Projektmitarbeiter/in)
6/07/26 → 10/08/26

TalenteGeomorph19: FFG-Talente Schülerpraktikum 2019
Otto, J.-C. (Projektleitung)
1/06/19 → 30/09/19

FUTURELAKES: Formation and future evolution of glacier lakes in Austria
Otto, J.-C. (Projektleitung)
1/02/15 → 30/06/20

FVVF: Frisch Vernässt und Voll Funktionsfähig
Salcher, B. (Projektleitung), Tribsch, A. (Projektmitarbeiter/in), Otto, J.-C. (Projektmitarbeiter/in), Hopfinger, M. (Projektmitarbeiter/in) & Althammer, M. (Projektadministration)
1/07/24 → 30/06/27

G01 MOREXPERT
Otto, J.-C. (Projektleitung)
1/07/10 → 31/03/14

MOREXPERT: G01 MOREXPERT – Monitoring Expert System for Hazardous Rock Walls Teilprojekt der K1-Zentrums alpS - Centre for Climate Change Adaptation Technologies
Schrott, L. (Projektleitung) & Otto, J.-C. (Projektmitarbeiter/in)
1/07/10 → 30/06/14

GPR_Laufen: Georadaruntersuchung_Laufen
Otto, J.-C. (Projektleitung)
30/05/20 → 30/06/20

GlacierRocks: Glacier-Headwall Interaction and its Influence on Rockfall Activity
Otto, J.-C. (Projektleitung)

1/04/17 → 31/03/20

Gutachten zur Naturgefahrenanalyse von Hochwasser und Muren im OT Bohlingen
Otto, J.-C. (Projektleitung) & Robl, J. C. (Projektmitarbeiter/in)
1/10/16 → 31/12/16

AlpLake-Change: High Alpine Lake Biodiversity and Climate Change – A Transdisciplinary Approach
Wickham, S. (Projektleitung), Petermann, J. (Projektmitarbeiter/in), Berninger, U.-G. (Projektleitung), Otto, J.-C. (Projektmitarbeiter/in), Hilberg, S. (Projektmitarbeiter/in) & Shinozaki, K. (Projektmitarbeiter/in)
1/02/23 → 31/12/26

Permafrost-Glacier Interaction - Implications of aggradation and degradation of permafrost on topography and hydrology of high alpine environments.
Otto, J.-C. (Projektleitung) & Schrott, L. (Projektmitarbeiter/in)
1/01/10 → 31/12/13

PERMALP.AT: Permafrost in den österreichischen Alpen
Schrott, L. (Projektleitung), Ebohon, B. (Projektmitarbeiter/in), Götz, J. (Projektmitarbeiter/in), Keuschnig, M. (Projektmitarbeiter/in) & Otto, J.-C. (Projektmitarbeiter/in)
1/06/08 → 30/06/11

Phusicos: PHUSICOS: 'According to nature' - solutions to reduce risk in mountain landscapes
Otto, J.-C. (Projektleitung)
1/05/18 → 30/04/23

Quantifying Late and Postglacial sediment fluxes and storage in nested Alpine catchments – a geomorphological perspective of the source area
Schrott, L. (Projektleitung), Götz, J. (Projektmitarbeiter/in) & Otto, J.-C. (Projektmitarbeiter/in)
1/09/08 → 30/09/12

Sediment budget for a glacier forefield (Pasterze, High Tauern, Austria) - quantification and temporal variability. A contribution to climate change research in high mountain environments
Schrott, L. (Projektleitung), Geilhausen, M. (Projektmitarbeiter/in) & Otto, J.-C. (Projektmitarbeiter/in)
1/09/08 → 30/09/12

Ridges2021: Talente_Ridges2021
Otto, J.-C. (Projektleitung)
1/06/21 → 30/09/21