

Curriculum Vitae

Zischg, Andreas Paul

Personal information

Italian, 01.01.1973, married, two childs;

ORCID ID: 0000-0002-4749-7670

Current position

2019- Assistant Professor for Human-Environment Systems Modelling, Institute of Geography, University of Bern, Switzerland
Principal investigator at Mobilair Lab for Natural Risks, Oeschger Centre for Climate Change Research, University of Bern, Switzerland

Education

PD Venia Docendi (Habilitation) in Hydrology. University of Bern, Switzerland. Habilitation thesis: "Spatio-temporal dynamics and drivers of flood risk change. Perspectives of coupled component models.", 2019.
CAS 2017 University of Bern, Switzerland. Certificate of Advanced Studies in Higher Education (19.5 ECTS)
Ph.D. 2005 University of Innsbruck, Austria. Faculty of Geo- and Atmospheric Sciences
Mag.rer.nat.2000 University of Innsbruck, Austria. Studies in Geography

Professional and academic experience

2014-2019 Senior researcher, principal investigator at Mobilair Lab for Natural Risks, Oeschger Centre for Climate Change Research and Institute of Geography, University of Bern, Switzerland
2005-2014 Co-founder, member of executive board, consultant at Abenis AG, Chur, Switzerland and Abenis Alpinexpert GmbH/srl, Bolzano, Italy (www.abenis.it)
2000 – 2005 Founder, managing director, consultant of start-up company "Geo Information Management", Bolzano, Italy

Teaching activities

2020 Flood modelling, contribution to Natural Hazards modelling Course at Bern University of Applied Sciences
2018- Seminar "Geodata analysis and modelling", University of Bern
2018, 2019 Climate Sciences Workshop II, University of Bern
2015-2018 Hydrology I: Principles, Hydrology I: Exercises, University of Bern
2016, 2017 Graduate School of the Humanities: Introduction to QGIS", University of Bern
2016, 2017 Proseminar in hydrology global water balances on river basin scale, University of Bern
2015 International Summer School on Geomorphology Kaunertal, Austria. Universities of Bonn, Giessen and Vienna
2014-2016 Research practice in hydrology, University of Bern
2014-2016 Field practice in hydrology, University of Bern
2002-2003 Land use planning and landscape management, University of Innsbruck

Scientific reviewing activities

Journal reviews

Nature Sustainability, Environmental Research Letters, Science of the Total Environment, Water Resources Research, Hydrology and Earth System Sciences, Journal of Hydrology, Natural Hazards and Earth System Sciences, Earth Surface Processes and Landforms, Journal of Environmental Management, International Journal of Climatology, IEEE Access, Weather and Climate Extremes, Physical Geography, Agricultural Water Management, Journal of Flood Risk Management, Systems, System Dynamics Review, Journal of Hydroinformatics, Water, Water International, Hydrology, Geosciences, Natural Hazards, International Journal of Disaster Risk Reduction, International Journal of Environmental Research and Public Health, AIMS Environmental Science, disP - The Planning Review, Journal of Mountain Science

Outreach and knowledge transfer

- 2019 Climate Change Impacts on Swiss Forests. Maps at geo.admin.ch <https://s.geo.admin.ch/8197e5ba10>
- 2013 Alpine strategy for adaptation to climate change in the field of natural hazards. Developed by the Platform on Natural Hazards of the Alpine Convention PLANALP. Alpine Convention.
- 2011 Permafrost Long-term Monitoring Network for the European Alps. Synthesis Report. International Research Society INTERPRAEVENT.
- 2011 Auswirkungen der landwirtschaftlichen Bewirtschaftung auf die Naturgefahren. Nationale Plattform für Naturgefahren PLANAT, Bern.
- 2001-2020 > 20 articles in journals and newspapers

Published Data and Models:

- Bernet, D.B., Stawicki, M., Zischg, A.P., Prasuhn, V., Weingartner, R., 2018. Observational data of surface water flood events. mendeley Data, v2. <http://dx.doi.org/10.17632/v8z6kwh8kw.2>
- Galatioto, N., Zischg, A.: LWDsimR: Simulation of Woody Debris Dynamics during Floods. 2018. Zenodo. <http://doi.org/10.5281/zenodo.1296733>.
- Zischg, A.: LWDsimR - Simulation of large wood dynamics during an extreme flood in the Aare River upstream of Bern, Switzerland. 2018. <http://dx.doi.org/10.17632/kchsr5tjw5.1>
- Zischg, A., Mosimann, M.: Validation of an uncalibrated flood inundation model (BASEMENT v2.7) with insurance claims. 2018. <http://doi.org/10.5281/zenodo.815136>
- Zischg, A.: IBER flood loss model. <https://github.com/zischg/IBERfloodlossmodel>
- Zischg, A.: FloodVulnerabilityFunctions. <https://github.com/zischg/FloodVulnerabilityFunctions>
- Zischg, A.: LWDsimAare. Simulation of large wood dynamics during an extreme flood in the Aare River upstream of Bern, Switzerland. <https://github.com/zischg/LWDsimAare>
- Zischg, A., Horton, P., Ramierez, J. Python scripts and models developed by the students and lecturers in the seminar on “geodata analysis and modelling” in spring semester of 2018, University of Bern. <https://github.com/unibe-geodata-modelling>

Publication list (last five years)

Zischg, Andreas Paul (PD Dr.)

ORCID: 0000-0002-4749-7670
Researcher ID: G-3382-2014
Scopus Author ID: 56414782400
Loop profile: 313912

Publications in international peer-reviewed scientific journals

- Keller, L., Zischg, A. P., Mosimann, M., Rössler, O., Weingartner, R., and Martius, O.: Large ensemble flood loss modelling and uncertainty assessment for future climate conditions for a Swiss pre-alpine catchment, *Science of The Total Environment*, 693, 133400, doi:10.1016/j.scitotenv.2019.07.206, 2019.
- Zischg, A. P., Gubelmann, P., Frehner, M., Huber, B.: High resolution maps of climatological parameters for analyzing the impacts of climatic changes on Swiss forests, *Forests*, 10, 617, doi:10.3390/f10080617, 2019.
- Bernet, D. B., Trefalt, S., Martius, O., Weingartner, R., Mosimann, M., Röthlisberger, V., and Zischg, A. P.: Characterizing precipitation events leading to surface water flood damage over large regions of complex terrain, *Environmental Research Letters*, doi:10.1088/1748-9326/ab127c, 2019.
- Zischg, A. P., Felder, G., Mosimann, M., Röthlisberger, V., and Weingartner, R.: Extending coupled hydrological-hydraulic model chains with a surrogate model for the estimation of flood losses, *Environmental Modelling & Software*, 108, 174–185, doi:10.1016/j.envsoft.2018.08.009, 2018.
- Zischg, A. P., Felder, G., Weingartner, R., Quinn, N., Coxon, G., Neal, J., Freer, J., and Bates, P.: Effects of variability in probable maximum precipitation patterns on flood losses, *Hydrol. Earth Syst. Sci.*, 22, 2759–2773, doi:10.5194/hess-22-2759-2018, 2018.
- Zischg, A. P., Hofer, P., Mosimann, M., Röthlisberger, V., Ramirez, J. A., Keiler, M., and Weingartner, R.: Flood risk (d)evolution: Disentangling key drivers of flood risk change with a retro-model experiment, *Sci. Total Environ.*, 639, 195–207, doi:10.1016/j.scitotenv.2018.05.056, 2018.
- Zischg, A. P., Mosimann, M., Bernet, D. B., and Röthlisberger, V.: Validation of 2D flood models with insurance claims, *Journal of Hydrology*, 557, 350–361, doi:10.1016/j.jhydrol.2017.12.042, 2018.
- Felder, G., Gómez-Navarro, J. J., Zischg, A. P., Raible, C. C., Röthlisberger, V., Bozhinova, D., Martius, O., and Weingartner, R.: From global circulation to local flood loss: Coupling models across the scales, *Science of The Total Environment*, 635, 1225–1239, doi:10.1016/j.scitotenv.2018.04.170, 2018.
- Mosimann, M., Frossard, L., Keiler, M., Weingartner, R., and Zischg, A.: A Robust and Transferable Model for the Prediction of Flood Losses on Household Contents, *Water*, 10, 1596, 2018. doi:10.3390/w10111596.
- Röthlisberger, V., Zischg, A. P., Keiler, M.: A comparison of building value models for flood risk analysis, *Natural Hazards and Earth System Sciences* 18, 2431–2453, 2018. 10.5194/nhess-18-2431-2018.
- Zischg, A., Galatioto, N., Mazzorana, B., Weingartner, R.: Modelling spatiotemporal dynamics of large wood recruitment, transport and deposition at river basin scale during extreme floods. *Water* 10, 1134, 2018. 10.3390/w10091134
- Bernet, D., Zischg, A., Prasuhn, V., Weingartner, R.: Modeling surface water floods in rural areas: lessons learned from the application of various uncalibrated models. *Environmental Modelling & Software* 109, 134–151, 2018. 10.1016/j.envsoft.2018.08.005
- Bermúdez, M., Zischg, A.: Sensitivity of flood loss estimates to building representation and flow depth attribution methods in micro-scale flood modelling. *Natural Hazards*, 92(3), 1633–1648, 2018. 10.1007/s11069-018-3270-7
- Thaler, T., Zischg, A., Keiler, M., Fuchs, S.: Allocation of risk and benefits—distributional justices in mountain hazard management. *Regional Environmental Change*, 18(2), 353–365, 2018. 10.1007/s10113-017-1229-y
- Felder, G., Zischg, A., Weingartner, R.: The effect of coupling hydrologic and hydrodynamic models on probable maximum flood estimation, *Journal of Hydrology*, 550, 157–165, 2017. 10.1016/j.jhydrol.2017.04.052.
- Röthlisberger, V., Zischg, A., Keiler, M.: Identifying spatial clusters of flood exposure to support decision making in risk management, *Science of The Total Environment*, 598, 593–603, 2017. 10.1016/j.scitotenv.2017.03.216.
- Fuchs, S., Röthlisberger, V., Thaler, T., Zischg, A., Keiler, M.: Natural Hazard Management from a Coevolutionary Perspective: Exposure and Policy Response in the European Alps, *Annals of the American Association of Geographers* 107(2), 1–11, 2016. 10.1080/24694452.2016.1235494
- Kenner, R., Chinellato, G., Iasio, C., Mosna, D., Cuozzo, G., Benedetti, E., Visconti, M. G., Manunta, M., Phillips, M., Mair, V., Zischg, A., Thiebes, B., and Strada, C.: Integration of space-borne DInSAR data in a multi-method monitoring concept for alpine mass movements, *Cold Regions Science and Technology*, 131, 65–75, 2016. 10.1016/j.coldregions.2016.09.007
- Fuchs, S., Keiler, M., Zischg, A.: A spatiotemporal multi-hazard exposure assessment based on property data, *Natural Hazards and Earth System Sciences*, 15, 2127–2142, 2015. 10.5194/nhess-15-2127-2015
- Papathoma-Köhle, M., Zischg, A., Fuchs, S., Glade, T., Keiler, M.: Loss estimation for landslides in mountain areas – An integrated toolbox for vulnerability assessment and damage documentation, *Environmental Modelling & Software*, 63, 156–169, 2015. 10.1016/j.envsoft.2014.10.003

Full list of indexed publications:

<https://www.scopus.com/authid/detail.uri?authorId=8394154000>

Monographs

- Brönnimann, S., Rohr, C., Stucki, P., Summermatter, S., Bandhauer, M., Barton, Y., Fischer, A., Froidevaux, P., Germann, U., Grosjean, M., Hupfer, F., Ingold, K., Isotta, F., Keiler, M., Martius, O., Messmer, M., Mülchi, R., Panziera, L., Pfister, L., Raible, C.C., Reist, T., Rössler, O., Röthlisberger, V., Scherrer, S., Weingartner, R., Zappa, M., Zimmermann, M., Zischg, A.: 1868 – das Hochwasser, das die Schweiz veränderte. Ursachen, Folgen und Lehren für die Zukunft. *Geographica Bernensia* G94, 52 pp., 2018. 10.4480/GB2018.G94.01.
- Brönnimann, S., Rohr, C., Stucki, P., Summermatter, S., Bandhauer, M., Barton, Y., Fischer, A., Froidevaux, P., Germann, U., Grosjean, M., Hupfer, F., Ingold, K., Isotta, F., Keiler, M., Martius, O., Messmer, M., Mülchi, R., Panziera, L., Pfister, L., Raible, C.C., Reist, T., Rössler, O., Röthlisberger, V., Scherrer, S., Weingartner, R., Zappa, M., Zimmermann, M., Zischg, A.: 1868 – L'alluvione che cambiò la Svizzera: Cause, conseguenze e insegnamenti per il futuro. *Geographica Bernensia* G94, 52 pp., 2018. 10.4480/GB2018.G94.02.
- Brönnimann, S., Rohr, C., Stucki, P., Summermatter, S., Bandhauer, M., Barton, Y., Fischer, A., Froidevaux, P., Germann, U., Grosjean, M., Hupfer, F., Ingold, K., Isotta, F., Keiler, M., Martius, O., Messmer, M., Mülchi, R., Panziera, L., Pfister, L., Raible, C.C., Reist, T., Rössler, O., Röthlisberger, V., Scherrer, S., Weingartner, R., Zappa, M., Zimmermann, M., Zischg, A.: 1868 – Les inondations qui changèrent la Suisse : Causes, conséquences et leçons pour le futur. *Geographica Bernensia* G94, 52 pp., 2018. 10.4480/GB2018.G94.03.
- Brönnimann, S., Rohr, C., Stucki, P., Summermatter, S., Bandhauer, M., Barton, Y., Fischer, A., Froidevaux, P., Germann, U., Grosjean, M., Hupfer, F., Ingold, K., Isotta, F., Keiler, M., Martius, O., Messmer, M., Mülchi, R., Panziera, L., Pfister, L., Raible, C.C., Reist, T., Rössler, O., Röthlisberger, V., Scherrer, S., Weingartner, R., Zappa, M., Zimmermann, M., Zischg, A.: 1868 – the flood that changed Switzerland: Causes, consequences and lessons for the future. *Geographica Bernensia* G94, 52 pp., 2018. 10.4480/GB2018.G94.04.
- Thomi, L., Zischg, A., Suter, H.: Was macht Hochwasserschutzprojekte erfolgreich? Eine Evaluation der Risikoentwicklung, des Nutzens und der Rolle privater Geldgeber. Bern: Geographisches Institut. Bern. ISBN 3952027812, 2015.

Contributions to books

- Fuchs, S., Röthlisberger, V., Thaler, T., Zischg, A., and Keiler, M.: Natural Hazard Management from a Coevolutionary Perspective: Exposure and Policy Response in the European Alps, in: *Mountains: Physical, Human-Environmental, and Sociocultural Dynamics*, Fonstad, M. A. (Ed.), Routledge, 146–155, 2018.
- Chinellato, G., Iasio, C., Mair, V., Strada, C., Mosna, D., Phillips, M., Kenner, R., Zischg, A.: Remote and Terrestrial Ground Monitoring Techniques Integration for Hazard Assessment and Prediction in Densely Populated Mountain Areas, in: *Engineering Geology for Society and Territory - Volume 2: Landslide Processes*, Lollino, G., Giordan, D., Crosta, G. B., Corominas, J., Azzam, R., Wasowski, J., and Sciarra, N. (Eds.), Springer International Publishing, Cham, s.l., 379–383, 2015. 10.1007/978-3-319-09057-3_59

Review articles

- Zischg, A.: Floodplains and Complex Adaptive Systems—Perspectives on Connecting the Dots in Flood Risk Assessment with Coupled Component Models. *Systems* 6 (2), 9, 2018. 10.3390/systems6020009

Peer-reviewed conference proceedings

- Brönnimann, S., Stucki, P., Zischg, A.: Simulation des Hochwassers von 1868 und Lehren für die Zukunft, in: *Forum für Wissen 2019. Lernen aus Extremereignissen*, Bründl, M., Schweizer, J. (Eds.), 78, WSL, Birmensdorf, 13–20, 2019.
- Armbruster, S., Hintermann, B., Zischg, A.: The effect of flood events on property and housing value: Evidence from the Swiss housing market, paper submitted for EARE annual conference (European Association of Environmental and Resource Economists), June 2018, Gothenburg, Sweden.
- Zischg, A.: River corrections and long-term changes in flood risk in the Aare valley, Switzerland, *E3S Web Conf.*, 7, 11010, 2016. 10.1051/e3sconf/20160711010
- Röthlisberger, V., Zischg, A., Keiler, M.: Spatiotemporal aspects of flood exposure in Switzerland, *E3S Web Conf.*, 7, 8008, 2016. doi:10.1051/e3sconf/20160708008
- Zischg, A., Felder, G., Weingartner, R., Gómez-Navarro, J. J., Röthlisberger, V., Bernet, D., Rössler, O., Raible, C., Keiler, M., Martius, O.: M-AARE - Coupling atmospheric, hydrological, hydrodynamic and damage models in the Aare river basin, Switzerland, in: *13th Congress INTERPRAEVENT 2016, 30 May to 2 June 2016, Lucerne, Switzerland. Conference proceedings*, 444–451, 2016.
- Fuchs, S., Zischg, A., Keiler, M.: Räumliche und zeitliche Exponiertheit von Gebäuden in Österreich, in: *13th Congress INTERPRAEVENT 2016, 30 May to 2 June 2016, Lucerne, Switzerland. Conference proceedings*, 503–512, 2016.
- Suter, H., Thomi, L., Kern, R., Künzler, M., Gusterer, C., Zischg, A., Weingartner, R., Martius, O., and Keiler, M.: Was macht Hochwasserschutzprojekte erfolgreich? Eine Evaluation von Projektablauf und Risiko basierend auf den Perspektiven

Schweizer Gemeinden, in: 13th Congress INTERPRAEVENT 2016, 30 May to 2 June 2016, Lucerne, Switzerland. Conference proceedings, 159–167, 2016.

Other publications

Mosimann, M., Thomi, L., Röthlisberger, V., Keiler, M., Zischg, A. (2017). 1.1 Millionen Menschen leben in der Schweiz in Hochwassergebieten. *Wasser Energie Luft*, 109(3), pp. 191-196. Schweizerischer Wasserwirtschaftsverband.

Suter, H., Thomi, L., Weingartner, R., Zischg, A.: Was macht Hochwasserschutzprojekte erfolgreich?, *Wasser Energie Luft*, 108, 115–120, 2016.

Huber, B., Zischg, A., Frehner, M., Carraro, G., Burnand, J.: Neu entwickelte Klimakarten für den Wald im Klimawandel. *Schweizerische Zeitschrift für Forstwesen*, 6/2015, 432-434, doi: 10.3188/szf.2015.0432, 2015.

Interactive web-mapping platforms: www.hochwasserrisiko.ch, www.schadenpotenzial.hochwasserrisiko.ch, www.risikodynamik.hochwasserrisiko.ch