

Markus Mosimann

CURRICULUM VITAE

University of Bern
Institute of Geography
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EDUCATION

Oct 2021 – May 2024 **PhD in Geography, University of Bern**

Development of innovative modeling approaches for impact-based warnings, designed to be feasible and effectively targeted to the needs of stakeholders, significantly improving the Swiss riverine flood forecasting system. Title: „*From Weather Forecasts to Impact-Based Flood Warning Systems - a Modelling Perspective*“

Sep 2013 – Feb 2016 **Master of Science in Geography, University of Bern**

Master thesis (2016): „*Erhebung der regionalen Hochwasser-Vulnerabilität im Simmental*“ – „*Assessment of the regional flood vulnerability in the Simmental*“

Sep 2010 – Feb 2014 **Bachelor of Science in Geography, University of Bern**

Minor in Biology

EMPLOYMENT

Mar 2016 – today

Mobililar Lab for Natural Risks (OCCR), University of Bern

Scientific Collaborator (100%, 80% since June 2020)

Transfer of research results to products for both the general public and experts by developing interactive web tools (implementation projects, www.hochwasserrisiko.ch).

Managing and processing data for the Mobililar Lab for Natural Risks. Conducting hydraulic modelling of the main river network in Switzerland and performing flood vulnerability and risk assessments. Collaborating on and authoring research papers (list of publications at the end of this document).

Jan 2016 – Feb 2016 **Cantonal Office for Agriculture and Nature**

Civil Service (100%)

Processing of spatial data with ArcGIS, coordination of contract negotiations

Jan 2015 – Dec 2015 **Cantonal Office for Water and Waste, Water Regulation**

Internship (30%)

Development of exercises for natural hazard consultants for a better integration to staff work

Oct 2010 – Dec 2014 **Coop (retail company)**

Temporary employee (20-40%)

Mar 2010 – Aug 2010 **Child day-care center**

Civil service (100%)

Oct 2009 – Mar 2010 **Retirement home**

Civil service (100%)

TEACHING ACTIVITIES

- June 2016 – today **Institute of Geography, University of Bern**
Providing assistance and technical support to master's students in their thesis research within the Human-Environmental-Systems Modelling and Hydrology groups.
Irregular collaboration in lectures, field courses, and seminars, contributing to the academic development of students.
- 2010 – 2014 **Secondary school Langnau i. E.**
Serving as a substitute teacher on three occasions over 1 to 4 weeks, managing classrooms and delivering lesson plans.

COMPUTER SKILLS

- Programming High level of competency in using R, Python, JavaScript, HTML, CSS, SQL (on PostgreSQL), basic level in LaTeX
- GIS High level of competency in using ArcGIS, QGIS and PostGIS, mastering in integrating these GIS tools with Python for advanced data analysis and automation.
- Microsoft Office Word, Excel, Powerpoint, Outlook

PUBLICATIONS

June 2024

Mosimann, Markus; Romppainen-Martius, Olivia; Zischg, Andreas Paul (2024). Two sides of the same coin? Hydrometeorological uncertainties in impact-based flood warning systems and climate change sensitivity of floodplains. *Weather and Climate Extremes* (Elsevier), manuscript submitted for publication.

Mosimann, Markus; Kauzlaric, Martina; Schick, Simon; Romppainen-Martius, Olivia; Zischg, Andreas Paul (2024). Evaluation of surrogate flood models for the use in impact-based flood warning systems at national scale. *Environmental modelling & software*, 173 Elsevier 10.1016/j.envsoft.2023.105936.

Weingartner, Rolf; Sturny, Rouven; **Mosimann, Markus;** Zischg, Andreas (2024). Hochwasserrisiken verstehen und beeinflussen – Das Schweizer Mobiliar Lab für Naturrisiken. *Hydrologie und Wasserbewirtschaftung*, 68(1), pp. 51-60. Bundesanstalt für Gewässerkunde

2023

Munz, Lukas; Kauzlaric, Martina; **Mosimann, Markus;** Fehlmann, Anna; Martius, Olivia; Zischg, Andreas Paul (2023). Participatory development of storymaps to visualize the spatiotemporal dynamics and impacts of extreme flood events for disaster preparedness. *International journal of disaster risk reduction*, 98, p. 104039. Elsevier 10.1016/j.ijdr.2023.104039.

2021

Zischg, Andreas Paul; Röthlisberger, Veronika; **Mosimann, Markus;** Profico-Kaltenrieder, Rahel; Bresch, David; Fuchs, Sven; Kauzlaric, Martina; Keiler, Margreth (2021). Evaluating targeted heuristics for vulnerability assessment in flood impact model chains. *Journal of flood risk management*, 14(4) Wiley 10.1111/jfr3.12736.

2020

Molinari, Daniela; Scorzini, Anna Rita; Arrighi, Chiara; Carisi, Francesca; Castelli, Fabio; Domeneghetti, Alessio; Gallazzi, Alice; Galliani, Marta; Grelot, Frédéric; Kellermann, Patric; Kreibich, Heidi; Mohor, Guilherme S.; **Mosimann, Markus**; Natho, Stephanie; Richert, Claire; Schroeter, Kai; Thieken, Annegret H.; Zischg, Andreas Paul; Ballio, Francesco (2020). Are flood damage models converging to “reality”? Lessons learnt from a blind test. *Natural Hazards and Earth System Sciences*, 20(11), pp. 2997-3017. Copernicus Publications 10.5194/nhess-20-2997-2020.

Glaus, Anik; **Mosimann, Markus**; Röthlisberger, Veronika; Ingold, Karin (2020). How flood risks shape policies: flood exposure and risk perception in Swiss municipalities. *Regional environmental change*, 20(120), pp. 1-17. Springer 10.1007/s10113-020-01705-7.

2019

Keller, Luise; Zischg, Andreas Paul; **Mosimann, Markus**; Rössler, Ole; Weingartner, Rolf; Martius, Olivia (2019). *Large ensemble flood loss modelling and uncertainty assessment for future climate conditions for a Swiss pre-alpine catchment*. *Science of the total environment*, 693, S. 133400. Elsevier 10.1016/j.scitotenv.2019.07.206

Bernet, Daniel Benjamin; Trefalt, Simona; Martius, Olivia; Weingartner, Rolf; **Mosimann, Markus**; Röthlisberger, Veronika Eva; Zischg, Andreas Paul (2019). *Characterizing precipitation events leading to surface water flood damage over large regions of complex terrain*. *Environmental Research Letters*, 14(6), 064010. IOP Publishing 10.1088/1748-9326/ab127c

2018

Mosimann, Markus; Frossard, Linda; Keiler, Margreth; Weingartner, Rolf; Zischg, Andreas Paul (2018). *A Robust and Transferable Model for the Prediction of Flood Losses on Household Contents*. *Water*, 10(11), S. 1596. MDPI 10.3390/w10111596

Zischg, Andreas Paul; Felder, Guido; **Mosimann, Markus**; Röthlisberger, Veronika; Weingartner, Rolf (2018). *Extending coupled hydrological-hydraulic model chains with a surrogate model for the estimation of flood losses*. *Environmental modelling & software*, 108, S. 174-185. Elsevier 10.1016/j.envsoft.2018.08.009

Zischg, Andreas Paul; Hofer, Patrick; **Mosimann, Markus**; Röthlisberger, Veronika; Ramirez, Jorge Alberto; Keiler, Margreth; Weingartner, Rolf (2018). *Flood risk (d)evolution: Disentangling key drivers of flood risk change with a retro-model experiment*. *Science of the total environment*, 639, S. 195-207. Elsevier 10.1016/j.scitotenv.2018.05.056

Zischg, Andreas Paul; **Mosimann, Markus**; Bernet, Daniel Benjamin; Röthlisberger, Veronika (2018). *Validation of 2D flood models with insurance claims*. *Journal of hydrology*, 557, S. 350-361. Elsevier 10.1016/j.jhydrol.2017.12.042

2017

Mosimann, Markus; Thomi, Luzius; Röthlisberger, Veronika Eva; Keiler, Margreth; Zischg, Andreas Paul (2017). *1.1 Millionen Menschen leben in der Schweiz in Hochwassergebieten*. *Wasser Energie Luft*, 109(3), S. 191-196. Schweizerischer Wasserwirtschaftsverband