Curriculum Vitae

Name:	Prof. Dr. W.W. (Walter) Immerzeel
Date of Birth:	21 June 1975
Nationality:	Dutch
Main Disciplines:	Mountain Hydrology, Meteorology, Climate Change
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Key Qualifications

Prof. Dr. Walter Immerzeel is a world-leading scientist with over 27 years of experience in geo-informatics, water resource management, and climate change. Renowned for his expertise in hydro-meteorological monitoring, remote sensing, simulation modelling, and spatial analysis, Walter has pioneered research in high mountain hydrology since 2002. As Chair of the Mountain Hydrology group at Utrecht University, he leads innovative projects and Himalayan expeditions at the forefront of climate and glacial science. A recipient of multiple prestigious awards and grants, Walter is passionate about translating advanced research into real-world solutions and mentoring the next generation of geoscientists. His previous roles include positions at the International Centre for Integrated Mountain Development (Nepal), ETH Zurich, FutureWater, and Wageningen Environmental Research.

Educational Background

2003 – 2008	PhD, Department of Physical Geography, Utrecht University, The Netherlands Thesis: Spatial modeling of mountainous basins; an integrated analysis of the hydrological cycle, climate change and agriculture
1993 – 1998	MSc Environmental Sciences, Utrecht University, The Netherlands

Professional Experience

2025 – present	Co-founder and CSO, hydrominds, Utrecht, NL
2022 – present	Research Director, Department of Physical Geography, Utrecht University, NL
2019 – present	Professor Mountain Hydrology, Utrecht University, NL
2016 – 2019	Associate Professor, Utrecht University, NL
2014 – 2016	Assistant Professor, Utrecht University, NL
2005 – 2016	Hydrologist, FutureWater, Wageningen, NL
2011 – 2014	Consultant and GIS-specialist in archaeology, Vestigia BV, Amersfoort, NL
2011 - 2014	Post-doc ETH Zurich, Switzerland
2008 - 2013	Post-doc at Utrecht University, the Netherlands (NWO-CASIMIR and NWO-VENI)
2003 – 2004	Associate Expert GIS and Natural Resources, International Centre for Integrated Mountain Development (ICIMOD), Kathmandu, Nepal
2000 - 2002	GIS-hydrologist, Alterra research institute, Wageningen, The Netherlands
1998 - 2000	GIS/RS consultant, Geodan Geodesie, Amsterdam, The Netherlands

Professional qualifications

2022	Senior Teaching Qualification (Utrecht University)
2016	Senior Research Qualification (Utrecht University)

Personal Grants and Awards

2021	AMMODO science award for fundamental research
2018	AGU Fellow
2018	James B. Macelwane medal
2017	Boussinesq Prize
2016	NWO-VIDI grant
2015	ERC Starting Grant
2011	NWO-VENI Grant
2007	NWO-Casimir Grant

Overseas Professional Experience

Resident	Nepal (2 years), Philippines (7 months)
Non-resident:	India, Bangladesh, China, United States, Kenya, Cambodia, Laos, Uzbekistan, Morocco, Spain, Pakistan, Switzerland

Selection of recent projects

2024 – to date	MegaWat - Megadroughts in the Water towers of Europe - from process understanding to strategies for management and adaptation.
2023 – to date	Hydrological Modelling, Snow and Glacier Monitoring in the Zarafshan basin in Tajikistan funded by GIZ.
2022 – to date	Contemporary and future risks of debris flows and floods in high mountain Asia (HIRISK) funded by AMMODO.
2021 – to date	Scientific coordinator of the “Developing Glacio-Hydrological Model and Integrated Water Resource Management Plan for a Selected Sub-basin in Central Himalayas, Uttarakhand, India” projected funded by the Swiss Agency for Development and Cooperation.
2021 – to date	Work package coordinator of the “Save the water! Save the grass! Save the tiger!” project funded by the NWO NWA program.
2019 - to date	PI of the “Targeting a climate change hotspot: science to support the SDGs and sustainable water management in the transboundary Indus river basin (SustaIndus)” project funded by the NWO WOTRO
2019 - to date	PI of the “Tibet’s lakes as a gauge for global warming” project funded by the NWO open competition
2018 - to date	PI in the Third Pole Environment Study for a Green Silk Road funded by the Chinese Academy of Sciences
2016 - to date	NWO-VIDI laureate at the department of physical geography of Utrecht University focusing on understanding of the high altitude water cycle
2016 - to date	ERC Starting Grant laureate at the department of physical geography of Utrecht University focusing on climate change impacts and regional difference in hydro-meteorology in the Himalayas and Karakoram.
2011- 2015	NWO-VENI laureate at the department of physical geography of Utrecht University dealing with climate change impacts on the cryosphere and hydrology of the Himalayas and Karakoram.
2011- 2014	Post-doc at ETH Zurich working on a cryospheric monitoring and modelling project in the Nepalese Himalayas.
2014 - 2018	PI of Climate_KIC funded PhD project “IceSpy: drones as smart innovation technology in climate change monitoring of glaciers”by Philip Kraaijenbrink

2014 - 2018	Coordinator of physical science component in the ”The Himalayan Adaptation, Water and Resilience (HI-AWARE)” research programme funded by DFID and IDRC
2014 - 2015	Supervisor of Postdoc project “High resolution atmospheric modelling in the Nepalese Himalayas” by Dr. Emily Collier
2014 - 2015	Project leader of a DFID funded project titled “Using unmanned aerial vehicles for glacier monitoring in the Himalayas”
2012 - 2015	Project leader of a DFID funded project titled “Calibrating above and below snow line precipitation as inputs to mountain hydrology models”.
2013 – 2016	Researcher in the project funded by the Swiss National Science foundation titled “UNderstanding COntrasts in high MoUNtain hydrology in Asia (UNCOMUN)”.
2013 – 2014	Researcher in the USAID funded project titled “Including the Sherpa factor into water resources projections in the Nepalese Himalayas”.
2013 – 2014	Project leader of the ICIMOD funded project on assessing climate change impact on the water resources of the upper Indus
2013 – 2014	Project leader of the ICIMOD funded project on the application of Unmanned Airborne Vehicles in glaciology
2012 – 2013	Project leader of the ICIMOD funded project to generate future water availability scenarios for the Indus, Ganges and Brahmaputra river basins in the framework of the Himalayan Climate Change Adaptation Programme (HICAP).

Teaching & Trainer experience

- Coordinator of MSc. course “Hydrology, Climate Change and the Cryosphere” (2016-2023)
- Lecturer of the BSc. course “Natural Hazards” (2023)
- Coordinator of the BSc course “Natural Hazards” (2022)
- Coordinator of Ma course “Hydrology, Climate Change and Fluvial Systems” (2015-2016)
- Coordinator of Ba course “Earth observation and data analysis” (2015-2016)
- Coordinator of the Ma course “Unsaturated Zone Hydrology” (2014-2015)
- Guest lecturer at Utrecht University for remote sensing and hydrology courses of the Department of Physical Geography.
- Supervision of Master and Bachelor students during their final thesis and guided research at the Department of Physical Geography of Utrecht University.
- Development and teaching of multiple short courses in the field of hydrology and climate change in Nepal, India, Bangladesh, China, Kenya, Morocco.

PhD thesis supervision

Name	University	Defense date	Role
Martine Nyeko	University of Naples	2010	Co-supervisor
Mohammed Cheema	TU Delft	2010	Co-supervisor
Silvan Ragettli	ETH Zurich	2014	Co-supervisor
Arthur Lutz	Utrecht University	2016	Co-promotor
Johannes Hunink	University of Cartagena	2017	Co-supervisor
Pascal Buri	ETH Zurich	2017	Co-supervisor
Philip Kraaijenbrink	Utrecht University	2018	Co-promotor
René Wijngaard	Utrecht University	2019	Promotor
Sonu Khanal	VU Amsterdam	2021	Promotor
Pleun Bonekamp	Utrecht University	2020	Promotor
Gijs Simons	TU Delft	2021	Promotor
Jakob Steiner	Utrecht University	2021	Promotor
Emmy Stigter	Utrecht University	2023	Promotor

Sanita Dhaubanjar	Utrecht University	2024	Promotor
Pranisha Pokhrel	Utrecht University	2026	Promotor
Varya Bazilova	Utrecht University	2026	Promotor
Oriol Pomarol Moya	Utrecht University	2027	Promotor
Florian Vacek	Utrecht University	2028	Promotor
Brecht d'Haeyer	Utrecht University	2028	Promotor

Language Skills

Dutch:	mother tongue
English:	fluent in writing and speech
French:	moderate
German:	moderate
Nepali:	moderate

Computational Tools

Simulation models:	SPHY, SWAT, SWAP, SimGro, WEAP
Programming/scripting:	R, Python, PCRaster
GIS:	ArcGIS, QGIS
Remote Sensing:	Erdas Imagine, ENVI, AgiSoft

Reviewer and Editor activities

Reviewer for scientific journals: The Cryosphere, Frontiers of Earth Sciences, Water Resources Research, Hydrology and Earth System Science, Geophysical Research Letters, Science, Nature, Nature Geoscience, Nature Climate Change, PNAS

Reviewer for research funding proposals for EU FP7, National Science foundations of Austria, Switzerland, Romania and the United Sates

2023 – present	Associate Editor of Water Resources Research journal Associate Editor for Frontiers in Earth Science journal
2024	Member of the NWO-VIDI personal research grants evaluation panel
2020	Member of the NWO-VENI personal grants evaluation panel
2016 – 2021	Member of the BEGCOM PhD supervision committee at Utrecht University
2015	Editor of the special issue in Annals of Glaciology resulting from the IGS symposium
2011	Reviewer of the Abu Dhabi Dialogue Knowledge Forum Small Grants programme supported by the World Bank

Selection of conference contributions

2024	Invited speaker at the EGU conference (Vienna, Austria)
2019	Co-convener of the session "Cryospheric changes and its impact on the High-Mountain Water Cycle" at American Geophysical Union Fall Meeting (San Francisco, USA)
2019	Keynote speaker at the "Mountain in a Changing World" conference (Kathmandu, Nepal)
2018	Co-convener of the session "Cryosphere-Hydrosphere interactions: The water cycle at the three Poles" at the Polar conference (Davos, Switzerland)
2018	Invited speaker at "From High Pole to Poles: a new perspective into Three Poles environment" session at the Polar 2018 conference (Davos, Switzerland)
2018	Invited speaker at the Indus Basin Knowledge Forum at IIASA (Laxenburg, Austria)
2016	Keynote speaker at the Campus Party event (Utrecht, The Netherlands)

2016	Invited speaker the EGU general assembly (Vienna, Austria)
2015	Invited speaker at the International Symposium on Glaciology in High-Mountain Asia (Kathmandu,Nepal)
2016-18	Primary convener of a session on “Advances in High-Altitude Glaciohydrology” at the American Geophysical Union Fall Meeting (San Francisco, USA)
2012/14/16-19	Invited speaker at the American Geophysical Union Fall Meeting (San Francisco, USA)
2012	Invited speaker at an international conference titled “The cryosphere of the Hindu-Kush Himalayas” (Kathmandu, Nepal)
2012	Invited speaker at an international workshop titled “Glaciers, snow melt and runoff in the Himalayas” in the framework of the EU funded project HighNoon (Kathmandu, Nepal)
2011	Invited speaker at a workshop on climate change impacts in the Hindu-Kush Himalayas (Kathmandu, Nepal)
2011	Invited speaker at a high-level work shop on the "Fate of Mountain Glaciers in the Anthropocene" at Pontifical Academy of Sciences in the Vatican, organized by Nobel prize winner Paul Crutzen
2010	Invited speaker at an international expert meeting on Climate Change in the Indus Basin (June 2010)
2009	Keynote speaker at the UNEP International Expert meeting on climate change in the Himalayas

Publications

Peer-reviewed publications

See updated list of publications on Google Scholar: https://scholar.google.nl/citations?user=MEmXPDEAAAAJ

Dhaubanjar, S., Lutz, A. F., Pradhananga, S., Smolenaars, W., Khanal, S., Biemans, H., Nepal, S., Ludwig, F., Shrestha, A. B., and Immerzeel, W. W., 2024, From theoretical to sustainable potential for run-of-river hydropower development in the upper Indus basin, Applied Energy, 357, 122372.

Dhaubanjar, S., Lutz, A. F., Smolenaars, W. J., Khanal, S., Jamil, M. K., Biemans, H., Ludwig, F., Shrestha, A. B., and Immerzeel, W. W., 2023 Quantification of run-of-river hydropower potential in the Upper Indus basin under climate change, Frontiers in Water, 5:1256249.

Smolenaars, W. J., Sommerauer, W. J.-W., van der Bolt, B., Jamil, M. K., Dhaubanjar, S., Lutz, A., **Immerzeel, W.W.**, Ludwig, F., and Biemans, H.: Spatial adaptation pathways to reconcile future water and food security in the Indus River basin, 2023, Commun Earth Environ, 4, 1–12.

Martin, L. C. P., Westermann, S., Magni, M., Brun, F., Fiddes, J., Lei, Y., Kraaijenbrink, P., Mathys, T., Langer, M., Allen, S., and **Immerzeel, W. W.**, 2023, Recent ground thermo-hydrological changes in a southern Tibetan endorheic catchment and implications for lake level changes, Hydrology and Earth System Sciences, 27, 4409–4436.

Smolenaars, W.J., Jamil, M.K., Dhaubanjar, S., Lutz, A.F., **Immerzeel, W.**, Ludwig, F., Biemans, H., 2023, Exploring the potential of agricultural system change as an integrated adaptation strategy for water and food security in the Indus basin. Environ Dev Sustain doi:10.1007/s10668-023-03245-6.

Li, D., Lu, X., Walling, D.E., Zhang, T., Steiner, J.F., Wasson, R.J., Harrison, S., Nepal, S., Nie, Y., **Immerzeel, W.W., 2022**. High Mountain Asia hydropower systems threatened by climate-driven landscape instability. Nature Geoscience 15, 520–530.

Emmer, A., Allen, S.K., Carey, M., Frey, H., Huggel, C., Korup, O., Mergili, M., Sattar, A., Veh, G., Chen, T.Y., Cook, S.J., Correas-Gonzalez, M., Das, S., Diaz Moreno, A., Drenkhan, F., Fischer, M., **Immerzeel, W.W.**, Izagirre, E., Joshi, R.C., Kougkoulos, I., Kuyakanon Knapp, R., Li, D., Majeed, U., Matti, S., Moulton, H., Nick, F., Piroton, V., Rashid, I., Reza, M., Ribeiro de Figueiredo, A., Riveros, C., Shrestha, F., Shrestha, M., Steiner, J., Walker-Crawford, N., Wood, J.L., Yde, J.C., 2022. Progress and challenges in glacial lake outburst flood research (2017–2021): a research community perspective. Natural Hazards and Earth System Sciences 22, 3041–3061.

Yao, T., Bolch, T., Chen, D., Gao, J., **Immerzeel, W.W.**, Piao, S., Su, F., Thompson, L., Wada, Y., Wang, L., Wang, T., Wu, G., Xu, B., Yang, W., Zhang, G., Zhao, P., 2022. The imbalance of the Asian water tower. Nature Reviews Earth & Environment 3, 618–632.

Lei, Y., Yang, K., **Immerzeel, W.W.**, Song, P., Bird, B.W., He, J., Zhao, H., Li, Z., 2022. Critical Role of Groundwater Inflow in Sustaining Lake Water Balance on the Western Tibetan Plateau. Geophysical Research Letters 49, e2022GL099268.

Khanal, S., Tiwari, S., Lutz, A. F., Hurk, B. V. D. & **Immerzeel, W. W**. Historical Climate Trends over High Mountain Asia Derived from ERA5 Reanalysis Data. Journal of Applied Meteorology and Climatology 62, 263–288 (2023).

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Fugger, S., Fyffe, C. L., Fatichi, S., Miles, E., McCarthy, M., Shaw, T. E., Ding, B., Yang, W., Wagnon, P., **Immerzeel, W.W.**, Liu, Q., and Pellicciotti, F. (2022). Understanding monsoon controls on the energy and mass balance of glaciers in the Central and Eastern Himalaya, The Cryosphere 16, 1631–1652.

Lutz, A. F., **Immerzeel, W. W.**, Siderius, C., Wijngaard, R. R., Nepal, S., Shrestha, A. B., Wester, P., and Biemans, H.. (2022), South Asian agriculture increasingly dependent on meltwater and groundwater, Nature Climate Change 12: 566-573. https://doi.org/10.1038/s41558-022-01355-z, 2022.

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Smolenaars, W. J., Dhaubanjar, S., Jamil, M. K., Lutz, A., **Immerzeel, W.W.**, Ludwig, F., and Biemans, H.: Future upstream water consumption and its impact on downstream water availability in the transboundary Indus Basin, Hydrology and Earth System Sciences 26, 861–883,

Molden, D. J., Shrestha, A. B., **Immerzeel, W. W.**, Maharjan, A., Rasul, G., Wester, P., Wagle, N., Pradhananga, S, Nepal, S. (2022). The Great Glacier and Snow-Dependent Rivers of Asia and Climate Change: Heading for Troubled Waters. In A. K. Biswas; C. Tortajada (Eds.), Water Security Under Climate Change, pp. 223–250. Springer.

Shea, J. M., Kraaijenbrink, P. D. A., **Immerzeel, W. W.**, Brun, F. (2021). Debris Emergence Elevations and Glacier Change. Frontiers in Earth Science 9, 1–12.

Veldhuijsen, S. B. M., Kok, R. J. de, Stigter, E. E., Steiner, J. F., Saloranta, T. M. and **Immerzeel, W. W.**: Spatial and temporal patterns of snowmelt refreezing in a Himalayan catchment, J. Glaciol., 1–21, 2021.

Steiner, J. F., Gurung, T. R., Joshi, S. P., Koch, I., Saloranta, T., Shea, J., Shrestha, A. B., Stigter, E. and **Immerzeel, W. W.**, 2021, Multi-year observations of the high mountain water cycle in the Langtang catchment , Central Himalaya, Hydrol. Process., 35, 1–7.

Khanal, S., Lutz, A. F., Kraaijenbrink, P. D. A., Hurk, B. van den, Yao, T. and **Immerzeel, W.W.**: Variable 21st Century Climate Change Response for Rivers in High Mountain Asia at Seasonal to Decadal Time Scales Water Resources Research, Water Resour. Res., 57(e2020WR029266), 1–26, doi:10.1029/2020WR029266, 2021.

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Zhang, H., **Immerzeel, W. W.**, Zhang, F., de Kok, R. J., Chen, D. and Yan, W., 2021, Snow cover persistence reverses the altitudinal patterns of warming above and below 5000 m on the Tibetan Plateau, Sci. Total Environ., 803, 149889.

Steiner, J. F., Kraaijenbrink, P. D. A., **Immerzeel, W. W.**, 2021, Distributed melt on a debris-covered glacier : field observations and melt modelling on the Lirung Glacier in the Himalaya, Front. Earth Sci. - Cryospheric Sci., 9(678375), 1–38.

van Tiggelen, M., Smeets, P., Reijmer, C., Wouters, B., Steiner, J., Nieuwstraten, E., **Immerzeel, W.** and van den Broeke, M., 2021, Mapping the aerodynamic roughness of the Greenland ice sheet surface using ICESat-2: Evaluation over the K-transect, Cryosph., 15, 2601–2621

Smolenaars, W. J., Lutz, A. F., Biemans, H., Dhaubanjar, S., **Immerzeel, W. W.** and Ludwig, F., 2021, From narratives to numbers; spatial downscaling and quantification of future water, food & energy security requirements in the Indus basin, Futures, 133, 1–15.

Edwards, T. L., Nowicki, S., Marzeion, B., Hock, R., Goelzer, H., Seroussi, H., Jourdain, N. C., Slater, D. A., Turner, F. E., Smith, C. J., McKenna, C. M., Simon, E., Abe-Ouchi, A., Gregory, J. M., Larour, E., Lipscomb, W. H., Payne, A. J., Shepherd, A., Agosta, C., , Patrick Alexander25, 26, Albrecht, T., Anderson, B., Asay-Davis, X., Aschwanden,

A., Barthel, A., Bliss, A., Calov, R., Chambers, C., Champollion, N., Youngmin Choi, Cullather, R., Cuzzone, J., Christophe Dumas, Felikson, D., Fettweis, X., Fujita, K., Galton-Fenzi, B. K., Gladstone, R., Golledge, N. R., Greve, R., Hattermann, T., Hoffman, M. J., Humbert, A., Huss, M., Huybrechts, P., **Immerzeel, W.**, Kleiner, T., Kraaijenbrink, P., Clec'h, S. Le, Lee, V., Leguy, G. R., Little, C. M., Lowry, D. P., Malles, J.-H., Martin, D. F., Maussion, F., Morlighem, M., O'Neill, J. F., Nias, I., Pattyn, F., Pelle, T., Price, S. F., Quiquet, A., Radić, V., Reese, R., Rounce, D. R., Rückamp, M., Sakai, A., Shafer, C., Schlegel, N.-J., Shannon, S., Smith, R. S., Straneo, F., Sun9, S., Tarasov, L., Trusel, L. D., Breedam, J. Van, Wal, R. van de, Broeke, M. van den, Winkelmann, R., Zekollari, H., Zhao, C., Zhang, T. and Zwinger, T., (2021), Projected land ice contributions to twenty-first-century sea level rise, Nature, 593, 74–82.

Dhaubanjar, S., Lutz, A., Gernaat, D., Nepal, S., Smolenaars, W., Pradhananga, S., Biemans, H., Ludwig, F., Shrestha, A., & **Immerzeel, W.** (2021). A systematic framework for the assessment of sustainable hydropower potential in a river basin – The case of the upper Indus. Science of The Total Environment, 786, 147142.

Zhang, H., **Immerzeel, W. W.**, Zhang, F., Kok, R. J. De, & Gorrie, S. J. (2021). Creating 1-km long-term (1980 – 2014) daily average air temperatures over the Tibetan Plateau by integrating eight types of reanalysis and land data assimilation products downscaled. International Journal of Applied Earth Observations and Geoinformation **97**, 102295.

Siderius, C., Biemans, H., Conway, D., **Immerzeel, W.**, Jaegermeyr, J., Ahmad, B., & Hellegers, P., 2021, Financial feasibility of water conservation in agriculture. Earth's Future, 1–21.

Stigter, E. E., Steiner, J. F., Koch, I., Saloranta, T. M., Kirkham, J. D., **Immerzeel, W. W.**, 2021, Energy and mass balance dynamics of the seasonal snowpack at two high-altitude sites in the Himalaya. Cold Regions Science and Technology 183, 103233.

Brun, F., Treichler, D., Shean, D., **Immerzeel, W. W.** (2020). Limited Contribution of Glacier Mass Loss to the Recent Increase in Tibetan Plateau Lake Volume. Frontiers in Earth Science 8: 1–14.

Kok, R. J. De, Kraaijenbrink, P. D. A., Tuinenburg, O. A., & Bonekamp, P. N. J., **Immerzeel, W.W.**, 2020 Towards understanding the pattern of glacier mass balances in High Mountain Asia using regional climatic modelling. The Cryosphere 14: 3215–3234.

Bonekamp, P. N. J., Wanders, N., van der Wiel, K., Lutz, A. F., & **Immerzeel, W. W.,** 2020, Using large ensemble modelling to derive future changes in mountain specific climate indicators in a 2 and 3°C warmer world in High Mountain Asia. International Journal of Climatology, https://doi.org/10.1002/joc.6742

Bonekamp, P. N., Steiner, J., & **Immerzeel, W.W.**, 2020, Using 3D turbulence-resolving simulations to understand the impact of surface properties on the energy balance of a debris-covered glacier. The Cryosphere, 14, 1611–1632.

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Farinotti, D., **Immerzeel, W. W.**, Kok, R. J. De, Quincey, D. J., Dehecq, A., 2020, Manifestations and mechanisms of the Karakoram glacier Anomaly. Nature Geoscience 13, https://doi.org/10.1038/s41561-019-0513-5

de Kok, R. J., Steiner, J. F., Litt, M., Wagnon, P., Koch, I., Azam, M. F., **Immerzeel, W. W**., 2020, Measurements, models and drivers of incoming longwave radiation in the Himalaya. International Journal of Climatology, 40(2), 942–956. https://doi.org/10.1002/joc.6249

Zhang, F., Shi, X., Zeng, C., Wang, L., Xiao, X., Wang, G., Chen, Y., Zhang, H., Lu, X., & **Immerzeel, W.**, 2020, Recent stepwise sediment flux increase with climate change in the Tuotuo River in the Central Tibetan Plateau. Science Bulletin, 65, 410–418. https://doi.org/10.1016/j.scib.2019.12.017

Jury, M. W., Maraun, D., Mendlik, T., Tani, S., Truhetz, H., **Immerzeel, W. W.**, & Lutz, A. F, 2020, Climate projections for glacier change modelling over the Himalayas. International Journal of Climatology, 40(3), 1738–1754. https://doi.org/10.1002/joc.6298

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