



Inne Vanderkelen

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Belgian, °Leuven, 23 August 1994



Education

- 2017-present Vrije Universiteit Brussel, Department of Hydrology and Hydraulic Engineering
FWO research fellow: PhD student in CLIMATE SCIENCE.
Proposal: “Reservoirs in a changing climate: a global perspective.”
- 2017-2018 Vrije Universiteit Brussel, Department of Hydrology and Hydraulic Engineering
Scientific collaborator
- 2015-2017 KU Leuven and Vrije Universiteit Brussel
MSc in GEOGRAPHY, specialization Earth and Climate
Summa cum laude (88 %) Thesis:
“Projecting the future levels of Lake Victoria: a water balance model study”.
- 2012-2015 KU Leuven
Bachelor in GEOGRAPHY, minor mathematics and physics.
Cum laude (72 %)

Experience

- 2017 – present Scientific Researcher
As a PhD researcher, my responsibilities include: conducting independent research, climate model simulations, code development, international collaborations (e.g. with NCAR), writing and publishing scientific papers, providing teaching and outreach.

Awards & fellowships

- 2022 [Regional Finalist](#) of the Green Impact International Special Awards, category Sustainability Hero
- 2021 Andrew Slater award for best graduate student contribution at [LWVG annual meeting](#) [\$500]
- 2020 [Prize Ernest Dubois](#) awarded by the [King Baudouin Foundation](#) [€ 20,000]
- 2018 Research foundation – Flanders (FWO): [PhD Fellowship](#). [€14,880 bench fee]
- 2018 VUB NSE Doctoral school – [Travel grant](#) for attending EGU General Assembly [€ 500]
- 2018 Third best poster prize at Flemish Supercomputer Centre User Day [400 node days]
- 2018 EGU Highlight Article award for Vanderkelen et al. (2018a, Hydrol. Earth Syst. Sci.).
- 2018 EGU Highlight Article award for Vanderkelen et al. (2018b, Hydrol. Earth Syst. Sci.)
- 2017 Best MSc thesis in Geography, awarded by the Alumni Geography and Tourism Leuven [€ 200]

Skills

Languages

| | |
|---------|---------------|
| Dutch | Mother tongue |
| English | Excellent |
| French | Good |
| Spanish | Basics (A2) |

Software

| | |
|------------------------------|---|
| Climate models and software: | CESM, CLM, ILAMB, mizuRoute |
| Programming languages: | Python (numpy, xarray, matplotlib, (geo)pandas), CDO, bash, Fortran, Matlab, R |
| Remote sensing and GIS: | QGIS, ArcGIS |
| Office applications: | LaTeX, MS Office, Mendeley |
| Operating systems: | Linux, Windows |

Scientific contributions

International peer-reviewed publications (9)

10. Nakulopa, F., Vanderkelen, I., van de Walle, J., van Lipzig, N. P. M., Tabari, H., Jacobs, L., Tweheyo, C., Dewitte, O., & Thiery, W. (2022). Evaluation of high-resolution precipitation products over the Mountains of the Moon (Uganda). *Journal of Hydrometeorology*, 23(5), 747–768 [pdf](#)

9. Grant L., **Vanderkelen I.**, Gudmundsson L., Tan Z., Perroud M., Stepanenko V. M., Debolskiy A., Droppers B., Janssen A. B. G., Woolway I. R., Schmid M., Schewe J., Zhao F., Golub M., Pierson D., Marcé R., Seneviratne S. I., Kirillin G., Thiery W. (2021). Attribution of worldwide lake systems change to anthropogenic forcing. *Nature Geoscience*, 14, 849–854. [pdf](#)

8. **Vanderkelen, I.**, Lipzig, N. P. M., Sacks, W. J., Lawrence, D. M., Clark, M. P., Mizukami, N., Pokhrel, Y., & Thiery, W. (2021). Simulating the Impact of Global Reservoir Expansion on the Present-Day Climate. *Journal of Geophysical Research: Atmospheres*, 126(16), e2020JD034485. [pdf](#) [code](#) [data](#)

7. Woolway, R. I., Sharma, S., Weyhenmeyer, G. A., Debolskiy, A., Golub, M., Mercado-Bettín, D., Perroud, M., Stepanenko, V., Tan, Z., Grant, L., Ladwig, R., Mesman, J., Moore, T. N., Shatwell, T., **Vanderkelen, I.**, Austin, J. A., DeGasperi, C. L., Dokulil, M., La Fuente S., Mackay, E. B., Schladow, S. G., Watanabe, S., Marcé, R., Pierson, D. C., Thiery, W., Jennings, E. (2021). Phenological shifts in lake stratification under climate change. *Nature Communications*, 12(1), 2318. [pdf](#)

6. **Vanderkelen I.**, van Lipzig N.P.M., Lawrence D. M., Droppers B., Gosling S. N., Janssen A. B. G., Marcé R., Müller-Schmied H., Perroud M., Pierson D., Pokhrel Y., Satoh Y., Schewe J., Seneviratne S. I., Stepanenko V. M., Tan Z., Woolway R. I., Thiery W. (2020) Global heat uptake by inland waters. *Geographical Research Letters*. 47(12), e2020GL087867. [pdf](#) [code](#)

5. **Vanderkelen I.**, Zscheischler J., Gudmundsson L., Keuler K., Rineau F., Beenaerts N., Vangronsveld J., Vicca S., Thiery W. (2020) A new method for assessing climate impacts in ecotron experiments. *International Journal of Biometeorology*, 64, 1709–1727. [pdf](#) [code](#)

4. Sterl, S., **Vanderkelen, I.**, Chawanda, C. J., Russo, D., Brecha, R., van Griensven, A., van Lipzig, N. P. M., Thiery, W. (2020) Smart renewable electricity portfolios in West Africa. *Nature Sustainability* 3, 710–719. [pdf](#)

3. Rineau F., Malina R., Beenaerts N., Arnauts N., Bardgett R. D., Berg M. P., Boerema A., Bruckers L., Clerinx J., Davin E. L., De Boeck H. J., De Dobbelaer T., Dondini M., De Laender F., Ellers J., Franken O., Gilbert L., Gudmundsson L., Janssens I. A., Johnson D., Lizin S., Longdoz B., Meire P., Meremans D., Milbau A., Moretti M., Nijs I., Nobel A., Pop I. S., Puetz T., Reynolds W., Roy J., Schuetz J., Seneviratne S. I., Smith P., Solmi F., Staes J., Thiery W., Thijs S., **Vanderkelen I.**, Van Landuyt W., Verbruggen E., Witters N., Zscheischler J., Vangronsveld J. (2019) Towards more predictive and interdisciplinary climate change ecosystem experiments. *Nature Climate Change*, 9(11), 809–816. [pdf](#)

2. **Vanderkelen, I.**, van Lipzig, N.P.M., Thiery, W. (2018) Modelling the water balance of Lake Victoria (East Africa) - Part 1: Observational analysis. *Hydrology and Earth System Sciences*, 22, 5509–5525

(HESS highlight article). [pdf](#) [code](#)

1. **Vanderkelen, I.**, van Lipzig, N.P.M., Thiery, W. (2018) Modelling the water balance of Lake Victoria (East Africa) - Part 2: Future projections. *Hydrology and Earth System Sciences*, 22, 5527-5549
(HESS highlight article). [pdf](#) [code](#)

Manuscripts forthcoming

Vanderkelen I., Gharari S., Mizukami N., Clark M., Lawrence D. M., Swenson S., Pokhrel Y., Hanasaki N., van Griensven A., Thiery W., Evaluating a reservoir parametrization in a vector-based global routing model for Earth System Model coupling. (submitted).

Golub, M., Thiery, W., Marcé, R., Pierson, D., **Vanderkelen, I.**, Mercado, D., Woolway, R. I., Grant, L., Jennings, E., Schewe, J., Zhao, F., Frieler, K., Mengel, M., Bogomolov, V. Y., Bouffard, D., Couture, R.-M., Debolskiy, A. V., Droppers, B., Gal, G., Guo, M., Janssen, A. B. G., Kirillin, G., Ladwig, R., Magee, M., Moore, T., Perroud, M., Piccolroaz, S., Raaman Vinnaa, L., Schmid, M., Shatwell, T., Stepanenko, V. M., Tan, Z., Yao, H., Adrian, R., Allan, M., Anneville, O., Arvola, L., Atkins, K., Boegman, L., Carey, C., Christianson, K., de Eyto, E., DeGasperi, C., Grechushnikova, M., Hejzlar, J., Joehnk, K., Jones, I. D., Laas, A., Mackay, E. B., Mammarella, I., Markensten, H., McBride, C., Özkundakci, D., Potes, M., Rinke, K., Robertson, D., Rusak, J., Salgado, R., van den Linden, L., Verburg, P., Wain, D., Ward, N. K., Wollrab, S., and Zdrovennova, G. (2022). A framework for ensemble modelling of climate change impacts on lakes worldwide: the ISIMIP Lake Sector, *Geosci. Model Dev.*, accepted.

De Hertog S., Haverman F., **Vanderkelen I.**, Guo S., Manola I., Luo F., Coumo D., Davin E. L., Duveiller G., Lejeune Q., Pongratz J., Schleussner C. F., Seneviratne S. I., Thiery W., Comparing Earth System Models under drastic land cover and land management changes for their effects on biogeophysics. In review.

Yao Y., **Vanderkelen I.**, Lombardozzi D., Swenson S., Lawrence D., Jägermeyer J., Grant L., Thiery W., Implementation and evaluation of irrigation techniques in the Community Terrestrial Systems Model. In review.

Gharari S., Mizukami N., Clark M., **Vanderkelen I.**, Tefs A., et al., A flexible and unifying framework for lake and reservoir water balance modelling in Earth system modelling. In review.

Reports

Hassler, B., Lauer, A., Reimuth, A., Müller, B., Davin, E., Hirschi, M., Coll, J., Grant, L., Thiery, W., **Vanderkelen, I.**, (2021). Thematic Assessment Report on Task 7.3: Earth Energy Balance, Copernicus Climate Change Service report, 36 p.

Abstracts in proceedings of international conferences

2022

EGU general assembly conference, Vienna, May (oral)

ISIMIP workshop, Potsdam, 16-20 May (poster)

Land Model & Biogeochemistry Working Group Winter Meeting, February (online presentation)

2021

AGU General assembly, 13-17 December (oral, remote)

AGU General assembly, 13-17 December (oral co-author, remote)

VUB PhD day: Sustainable Development Goals, 27th of May (oral, remote)

EGU general assembly conference, April (virtual PICO presentation, remote)

Land Model & Biogeochemistry Working Group Winter Meeting, February ([online presentation](#) – Andrew Slater award for best graduate student presentation). [pdf](#)

2020

AGU General Assembly, December (oral, remote)

International Environmental Modelling and Software Society Conference, July (poster & oral, remote)

International Environmental Modelling and Software Society Conference, July (poster, co-author)

Cross-sectoral ISIMIP online workshop, June. (oral, remote)

EGU general assembly conference, May. ([online display](#))

EGU general assembly conference, May. ([online display](#), co-author)

EGU general assembly conference, May. ([online display](#), co-author)

EGU general assembly conference, May. ([online display](#), co-author)

2019

AGU Fall Meeting, San Francisco, December (poster, co-author)

6th Workshop on Parameterization of Lakes in NWP and Climate Modelling, Toulouse, October (oral)

EGU general assembly conference, Vienna, April (poster).

CLIMRISK conference, Trento, October (poster, co-author)

Land Model Working Group Winter Meeting, Boulder, February (oral) [pdf](#).

2018

Swiss Climate Summerschool, Grindelwald, August (poster).

Flemish Supercomputer Users day, May (poster – 3rd place best poster prize).

EGU general assembly conference, Vienna, April (oral).

The Disaster Risk Reduction workshop, Kampala, Uganda, 6th of February (oral)

2017

The 7th Belgian Geography day, Liège, Belgium, 17th of November (oral)

EGU general assembly conference, Vienna, April (poster).

Contributions to teaching and student representation

2018-2022:

- Teaching assistant of the course 'Land-Climate Dynamics' (coordinator Wim Thiery)

MSc in Water Resources Eng., MSc in Geography and MSc of Applied Computer Science (VUB and KU Leuven)

2017-2018:

- Teaching assistant for 'GIS for Water Resources Engineering' (coordinator Boud Verbeiren)

MSc in Water Resources Engineering (VUB)

2014-2015:

- Student tutor in Peer Assistant Learning sessions for Physical Geography (BSc Geography)

MSc thesis supervision

- Rosa Pietroiusti (Geography, ongoing), Seppe Lampe (Applied Computer Science, 2020-2021), An Rubens (Geography, 2020-2021), Faluku Nakulopa (Water Resources Engineering, 2019-2020), Luke Grant (Water Resources Engineering, 2018-2019), Daniela Hernández (Civil Engineering, 2017-2018)

Student representation

- Departmental Council of Hydrology and Hydraulic Engineering: PhD representative (2020-present)

- Permanent Education Commission BSc Geography KU Leuven (2013-2016)

- Interuniversity Education Commission MSc Geography KU Leuven (2015-2017)
- Student council (StuRa): representative of geography and tourism students KU Leuven (2014-2015)

Contributions to research proposals

- FWO PhD fellowship application of Seppe Lampe, submitted in 2021
- FWO PhD fellowship application of Lualawi Admasu, submitted in 2021

Reviews of research papers

For scientific journals: Geoscientific Model Development, Ecology and Evolution, Journal of Hydrology, Scientific Reports, Geophysical Research Letters

Outreach

15. Presentation on climate change for local organization We-IT in Hoeilaart, (11 May 2022).
16. Podcast 'A scientist with a cause' of VUB on the SDG of clean water
17. Interview in 'Kerk en Leven' on Women in Science. (8th August 2021). [pdf](#)
14. Speaker on 'Soapbox Science' event (Brussels, 26th June 2021). [aftermovie](#)
13. Interview in 'Planeet Frank' [podcast](#) (by Frank Deboosere, Flemish TV weather forecaster)
12. Interview in Karrewiet on the European Green Deal (children's news; [broadcasted](#) on national television on the 12th of December 2019).
11. Interview on water-related problems in Belgium for the #klimaatraad series of CANVAS (Flemish TV channel). Appeared [online](#) on the 19th of July 2019.
10. Co-organized a EUGreenWeek Partner Event: "BridgeOverWater: connecting science and policy", in Brussels, Belgium, May, 2019.
9. Presentation about climate change and framing the climate protests to 6th grade secondary school students in Brussels, Belgium, April 2019.
8. Presentation about climate change and the climate protests to 6th grade primary school students in Kessel-Lo, March 2019
7. Co-organized "water4climate" march to ask for Comprehensive water policy taking into account the potential effects of climate change, Brussels March 2019.
6. Led workshop "Water in the city, measuring is knowing", with 6th grade secondary school students about measuring precipitation. Brussels, March 2019.
5. Taught 3 courses to 3rd and 4th grade secondary school students on climate science in Brussels for the [Prometeruse project](#), Spring 2019.
4. Co-authored blog article on [climate impacts of individuals](#), November 2018.
3. Interview in Karrewiet on 1.5 °C warming (childrens news; [broadcasted](#) on national television on the 1st of October 2018), and mentioned on [VUB Today](#).
2. Theater performance "[The climate projections](#)" by Frank Theys: artistical performance. Brussels, March 2018.
1. Led workshop "Water in the city, measuring is knowing" with 6th grade secondary school students about measuring precipitation. Brussels, March 2018.

Other experience

International exchanges

- National Center for Atmospheric Research (NCAR), Boulder CO, USA (Research stay, spring 2019)
- ETH Zürich, Institute for Atmospheric and Climate Science (Erasmus exchange, fall 2016)

Summer schools

- Introduction to Machine Learning (FLAMES summer school, Hasselt, 2021)
- CTSM tutorial (NCAR, Boulder, 2019)

- International Swiss Climate Summer School (Grindelwald, CH, 2018)
- CESM tutorial (NCAR, Boulder CO, 2017)

Trainings

- Personal effectiveness with MS Outlook training (Winter 2020)
- Summer school on Science communication 'Zeg 't eens' (Summer 2018)
- Media Training (Spring 2018)
- Education training for teaching assistants (Spring 2018)
- Writing Articles and Abstracts in the Natural and Applied Sciences (Spring 2018)
- Efficient Networking Skills (Fall 2017)

Voluntary work

- Coordinator of the Green team of the Hydrology department, as part of [the VUB Green impact project](#) (2018-2021; Golden award in 2019 and 2020)
- Contact Person of the Leuven entity for the European Geography Association for geography students (2015-2016)
- President of the university association for geography students Merkator Leuven vzw (2014-2015)
- Certified head leader on youth camps with [Kazou](#) (2012-2016)

Other

- Student job at GIM (Geo Information company), Summer 2016
- Saxophone player (18 years)