

CV Philipp Wanner as of February 7, 2024

PERSONAL INFORMATION

Name: **Philipp Wanner**, Gender: male, ORCID: 0000-0002-9935-3572
Date of birth: 25-May-1986 (Bern, Switzerland); Nationality: Swiss
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EDUCATION AND ACADEMIC DEGREES

2016, Nov **PhD in Contaminant Hydrogeology**: University of Neuchâtel, Switzerland, Centre for Hydrogeology and Geothermics (CHYN), Switzerland
2012, Aug **Master of Science in Environmental and Resource Geochemistry**: University of Bern, Institute of Geological Science, Switzerland
2010, Sep **Bachelor of Science in Geology**: University of Bern, Institute of Geological Science, Switzerland

CURRENT POSITION

Since 2023, Nov **Docent**, University of Gothenburg, Sweden, Department of Earth Sciences.
Since 2020, Sep **Assistant Professor (tenure-track)**, University of Gothenburg, Sweden, Department of Earth Sciences
Since 2021, Mar Principal Investigator of the North American University Consortium for Field-Focused Groundwater Research.

PREVIOUS POSITIONS

2019, Jan – 2020, Aug: **Postdoctoral Researcher**, University of Bern, Institute of Geological Sciences, Switzerland
2017, Feb – 2018, Dec: **Postdoctoral Researcher**, University of Guelph, Morwick G360 Groundwater Research Institute, Canada
2015, Jun and 2016, Apr: **Guest Researcher**, University of Princeton, Princeton Environmental Institute, USA
2012, Nov – 2016, Dec: **PhD student and Assistant** at University of Neuchâtel, Centre for Hydrogeology and Geothermics (CHYN), Switzerland
2010, Sep – 2012, Oct: **Master student and Assistant** at University of Bern, Institute of Geological Sciences, Switzerland
2007, Sep – 2010, Aug: **Bachelor student and Assistant** at University of Bern, Institute of Geological Sciences, Switzerland

CURRENT AND PREVIOUS RESEARCH FUNDING

Current funding:

2023 – 2024 **Honorarium** from University of Guelph, Morwick G360 Groundwater Research Institute, Canada. (162 400 SEK).
2023 – 2027: **FORMAS**: Sustainable innovative drinking water treatment solutions for large-scale water supply and reuse (SIDWater); 16 000 000 SEK (Co-PI)
2022 – 2025: **Swedish Research Council (VR) Starting Grant**: Plastic and pesticides in agricultural soils – A risk for groundwater systems and drinking water supplies worldwide?; 4 000 000 SEK (PI)
2022 – 2025: **FORMAS Early Career Research Grant**: Artificial groundwater recharge – A shortcut for harmful poly- and perfluoroalkyl substances (PFASs) into groundwater systems and drinking water supplies – Can we avoid this?; 3 969 025 SEK (PI)
2022 – 2024: **Carl Tryggers Stiftelse**: Determining chlorinated solvent biodegradation in contaminated groundwater systems and its implications for remediation; 360 750 SEK (PI)
2021 – 2024: **Support grant for purchase and or maintenance of equipment for teaching & Research** from the Marine Science Department, University of Gothenburg, Sweden; 115 000 SEK; (Co-PI)

Previous funding:

Swiss National Science Foundation (SNSF) (Main Applicant), Swiss Academy of Natural Sciences (SCNAT+) (Main Applicant), Natural Sciences and Engineering Research Council of Canada (NSERC) (Co-Applicant), BP Canada (Co-Applicant); **in total** ~3 000 000 SEK.

FIVE SELECTED AWARDS, HONORS AND PRIZES

1. Featuring of my paper “Assessing toluene biodegradation under temporally varying redox conditions in a fractured bedrock aquifer using stable isotope methods” as research highlight by the University of Guelph, Canada; <https://www.uoguelph.ca/ceps/drink-up> **2020**
2. Best PhD Thesis award (Prix Adrien Guebhard-Severine: 1'000 Swiss francs ~10'000 SEK) from the University of Neuchatel, Centre for Hydrogeology and Geothermics (CHYN), Switzerland, **2016**
3. Among the three best presentations at the “In-Situ Remediation” Conference, London, United Kingdom, **2014**
4. Best Master Thesis poster award from the University of Bern, Institute of Geological Sciences, Switzerland, **2012**
5. Best Bachelor Thesis presentation award from the University of Bern, Institute of Geological Sciences, Switzerland, **2010**

REVIEWED INTERNATIONAL PUBLICATIONS AND PRESENTATIONS

45 reviewed international publications, whereof 24 were published in peer reviewed journals (12 as first author and 10 as co-author) and 23 in peer reviewed conference proceedings (10 as first author and 13 as co-author). Total number of citations: 464, H-index: 12, i10-index: 12 (Google Scholar, Nov 20, 2023). 14 oral presentations at various international conferences. Chair of oral presentation conference session "Diffusion - A Multidisciplinary Perspective" at the GAC-MAC-IAH Conference, Quebec City, in Canada, May 12-15, 2019.

SUPERVISION OF JUNIOR RESEARCHER AT GRADUATE AND POSTGRADUATE LEVEL

Current: Main supervisor of 1 postdoc, 1 PhD student, 1 Master student and 2 Bachelor students. Previous: Main supervisor of 2 Master students, and co-supervisor of 2 PhD students, and 2 Master students.

TEACHING ACTIVITIES

Three full courses at the Earth Science Department of the University of Gothenburg, Sweden namely Hydrology and Hydrogeology (GV2002) and Naturvetenskapliga verktyg för geovetare (GV200) on the bachelor level and Applied Hydrogeology (GVG460) on the master's level.

REVIEWING ACTIVITIES

Review requests from 10 different journals including Nature Water, Nature Communications in Earth & Environment; Environmental Science & Technology; Environmental Science & Technology Letters; Geochimica et Cosmochimica Acta; Science of the Total Environment; Chemosphere; ACS Omega; Environmental Science: Processes and Impacts; Journal of Hydrology; Water Research. In total > 40 papers reviewed. In addition, proposal evaluation request from the Israel Science Foundation (2021/2023) and the Natural Environment Research Council (NERC) of the UK (2022).

THESES EXAMINATION

Since 2020, examiner of 8 Bachelor and 4 Master theses at the University of Gothenburg, Department of Earth Sciences, Sweden.

INSTITUTIONAL RESPONSIBILITIES

- 2024, Jan – Present: Member of the steering committee of the Future Chemical Risk Assessment and Management Initiative (FRAM) of the University of Gothenburg, Sweden (<https://www.gu.se/en/fram-chemical-risk-assessment>).
- 2022, Aug – Present: Member of the research committee, Earth Science Department, University of Gothenburg, Sweden.
- 2022, Jun – Present: Member of the Department Council, Earth Science Department, University of Gothenburg, Sweden.
- 2021, Jun – 2023, Nov: Member of the steering committee for the Skogaryd field station, Vänersborg, Sweden
- 2021, Apr – Present: Management of analytical equipment for measuring organic compound-specific stable carbon and hydrogen isotope ratios (GC-IRMS), at the University of Gothenburg, Department of Earth Sciences, Sweden.

OUTREACH

- 2023, Dec: Interview on Swedish Radio (P4) about groundwater and drinking water contamination in Sweden.
- 2023, Sep: Popular Science presentation at Bokmässan in Gothenburg about groundwater contamination in Sweden.
- 2021, Aug: Interview with Sverige TV (SVT) about concrete production by Cementa on Gotland: <https://www.svt.se/nyheter/vetenskap/sa-ser-domstolens-krav-pa-cementa-ut>

PUBLICATION LIST

Fox, S., Stefánsson, H., Ásbjörnsson, E.J., Peternell, M., **Wanner, P.**, Sturkell, E., Konrad-Schmolke, M., Zlotskiy, E., 2024

Physical characteristics of microplastic particles and potential for global atmospheric transport: A meta-analysis

Environmental Pollution, 342: 122938

<https://doi.org/10.1016/j.envpol.2023.122938>

Moghadasi, R., Mumberg, T., **Wanner, P.**, 2023.

Spatial Prediction of Per- and Polyfluoroalkyl Substances (PFAS) Concentrations in European Soils

Environmental Science and Technology Letters, 10: 1125–1129

<https://doi.org/10.1021/acs.estlett.3c00633>

Wanner, P., Zischg, A., Wanner, C., 2023.

Quantifying the glacial meltwater contribution to mountainous streams using stable water isotopes – What are the opportunities and limitations?

Hydrological Processes, 37(9): 14963

<http://dx.doi.org/10.1002/hyp.14963>

Wanner, P., Freis, M., Peternell, M., Kelm, V., 2022.

Risk Classification of Contaminated Sites - Comparison of the Swedish and the German Method.

Journal of Environmental Management, 327: 116825

<https://doi.org/10.1016/j.jenvman.2022.116825>

Parker, B.L., Cherry, J., **Wanner, P.**, 2022.

Determining Effective Diffusion Coefficients of Chlorohydrocarbons in Natural Clays: Unique Results from Highly Resolved Controlled Release Field Experiments.

Journal of Contaminant Hydrology, 250: 104075

<https://doi.org/10.1016/j.jconhyd.2022.104075>

Lincker, M., Lagneau, V., Guillon, S., **Wanner, P.**, 2022.

Identification of chlorohydrocarbon degradation pathways in aquitards using dual element compound-specific isotope measurements in aquifers.

Chemosphere, 303(2): 135131

<https://doi.org/10.1016/j.chemosphere.2022.135131>

Zimmermann, J., **Wanner, P.**, Hunkeler, D., 2021.

Compound-specific carbon isotope analysis of volatile organic compounds in complex soil extracts using purge and trap concentration coupled to heart-cutting two-dimensional gas chromatography–isotope ratio mass spectrometry.

Journal of Chromatography A, 1655: 462480.

<https://doi.org/10.1016/j.chroma.2021.462480>

Halloran, L. J. S., Vakili, F., **Wanner, P.**, Shouakar-Stash, O., Hunkeler, D., 2021.

Sorption- and diffusion-induced isotopic fractionation in chloroethenes.

Science of the Total Environment, 788: 147826.

<https://doi.org/10.1016/j.scitotenv.2021.147826>

BenIsrael, M., Habtewolda, J.Z., Khoslaa, K., **Wanner, P.**, Aravena, R., Parker, B.L., Haack, E.A., Tsao, D.T., Dunfield, K., 2021.

Degrader bacteria and fungi enriched in rhizosphere soil from a toluene phytoremediation site identified using DNA stable isotope probing.

International Journal of Phytoremediation, 23(8): 846-856

<https://doi.org/10.1080/15226514.2020.1860901>

Wanner, P., 2021.

Plastic in agricultural soils – A global risk for groundwater systems and drinking water supplies? – A review.

Chemosphere, 264: 128453.

<https://doi.org/10.1016/j.chemosphere.2020.128453>

Steelman, C., Meyer, J., **Wanner, P.**, Swanson, B., Conway-White, O., Parker, B., 2020.

The importance of transects for characterizing aged organic contaminant plumes in groundwater.

Journal of Contaminant Hydrogeology, 235: 103728.

<https://doi.org/10.1016/j.jconhyd.2020.103728>

Filippini, M., Parker, B.L., Dinelli, E., **Wanner, P.**, Chapman, S.W., Gargini, A., 2020.

Assessing aquitard integrity in a complex aquifer-aquitard system contaminated by chlorinated hydrocarbons.

Water Research, 171: 115388.

<https://doi.org/10.1016/j.watres.2019.115388>

Ben-Israel, M., **Wanner, P.**, Fernandes, J., Burken, J.G., Aravena, R., Parker, B.L., Haack, E.A., Tsao, D.T., Dunfield, K., 2020.

Quantification of toluene phytoextraction rates and microbial biodegradation functional profiles at a fractured bedrock phytoremediation site.

Science of the Total Environment, 707: 135890.

<https://doi.org/10.1016/j.scitotenv.2019.135890>

Wanner, P., Hunkeler, D., 2019.

Molecular Dynamic Simulations of Carbon and Chlorine Isotopologue Fractionation of Chlorohydrocarbons During Diffusion in Liquid Water.

Environmental Science and Technology Letters, 6: 681 – 686.

<https://doi.org/10.1021/acs.estlett.9b00640>

Wanner, P., Aravena, R., Fernandes, J., Ben-Israel, M., Haack, E.A., Tsao, D.T., Dunfield, K., Parker, B.L., 2019.

Assessing toluene biodegradation under temporally varying redox conditions in a fractured bedrock aquifer using stable isotope methods.

Water Research, 165: 114986.

<https://doi.org/10.1016/j.watres.2019.114986>

Ben-Israel, M., **Wanner, P.**, Aravena, R., Parker, B.L., Haack, E.A., Tsao, D.T., Dunfield, K., 2018.

Toluene biodegradation in the vadose zone of a poplar phytoremediation system identified using metagenomics and toluene-specific stable carbon isotope analysis.

International Journal of Phytoremediation, 21: 1- 10.

<https://doi.org/10.1080/15226514.2018.1523873>

Wanner, P., Hunkeler, D., 2018.

Isotope fractionation due to aqueous phase diffusion—What do diffusion models and experiments tell? – A review

Chemosphere, 219: 1032 – 1043.

<https://doi.org/10.1016/j.chemosphere.2018.12.038>

Wanner, P., Parker, B.L., Chapman, S.W., Lima, G., Gilmore, A., Mack, E.E., Aravena, R., 2018.

Identification of degradation pathways of chlorohydrocarbons in saturated low permeability sediments using compound-specific isotope analysis.

Environmental Science and Technology, 52: 7296–7306.

<https://doi.org/10.1021/acs.est.5b06330>

- Wanner, P.**, Parker, B.L., Hunkeler, D., 2018.
Assessing the effect of plume persistence in aquifers due to back-diffusion.
Science of the Total Environment, 633: 1602 – 1612.
<https://doi.org/10.1016/j.scitotenv.2018.03.192>
- Bouchard, D, **Wanner, P.**, Luo, H., Henderson, J.K., Pirkle, R.J., Hunkeler, D., 2017.
Optimization of the solvent-based dissolution method to sample volatile organic compound vapors for compound-specific isotope analysis.
Journal of Chromatography A, 1520: 23 – 34.
<https://doi.org/10.1016/j.chroma.2017.08.059>
- Wanner, P.**, Parker B.L., Chapman, S.W., Aravena, R., Hunkeler, D., 2017.
Does sorption influence isotope ratios of chlorinated hydrocarbons under field conditions? *Applied Geochemistry*, 84: 348 – 359.
<https://doi.org/10.1016/j.apgeochem.2017.07.016>
- Wanner, P.**, Parker B.L., Chapman, S.W., Aravena, R., Hunkeler, D., 2016.
Quantification of degradation of chlorinated hydrocarbons in low permeability sediments using compound-specific isotope analysis.
Environmental Science and Technology, 50 (11): 5622–5630.
<https://doi.org/10.1021/acs.est.8b01173>
- Wanner, P.**, Hunkeler, D., 2015.
Carbon and chlorine isotopologue fractionation of chlorinated hydrocarbons during diffusion in water and low permeability sediments.
Geochimica et Cosmochimica Acta, 157: 198-212.
<https://doi.org/10.1016/j.gca.2015.02.034>
- Wanner, P.**, Al-Sulaimani, M.Y.N., Waber, N., Wanner, C., 2015.
Assessing the environmental hazard of using seawater for ore processing at the Lasail mine site in the Sultanate of Oman.
Mine Water and the Environment, 34(1): 59-74.
<https://link.springer.com/article/10.1007/s10230-014-0281-9>