

Yannick Oswald

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Institute of Geography and Sustainability
University of Lausanne

Research areas

Ecological- and climate economics
Complex economies and social systems
Computational models and methods

EMPLOYMENT

Jan.2024–present PostDoc University of Lausanne
Climate economics and complexity economics

2022–Dec.2023 PostDoc University of Leeds
Agent-based modelling and data assimilation

EDUCATION

2018–2022 PhD University of Leeds, Ecological Economics
Thesis: Inequality, (re)distribution and luxury-taxation
of international household energy and carbon footprints

2015–2018 M.Sc. University of Graz, International Sustainable Development
Semesters abroad at Utrecht University, NL and TERI University, IN
Specialization tracks: Energy, Economics, System science

2012–2015 B.A. Karlshochschule, International Energy Management
Semester abroad at UPAEP, MX

PUBLICATIONS

Working papers and in preparation

- 2024 Oswald, Y. and Mellacher, P. Wealth taxation in an agent-based Schumpeterian model. in preparation
- 2024 Asher, M., Oswald, Y., Malleson, N. Understanding Pedestrian Dynamics using Machine Learning with Real-Time Urban Sensors. in preparation
- 2024 Oswald, Yannick. Global convergence of incomes in a climate-constrained world. in preparation
- 2024 Oswald, Y., Chen, X., Malerba, D., Feng, K., Hubacek, K. Revisiting equalised incomes for quantifying carbon inequality. Working paper at <https://serval.unil.ch>

- 2023 Chen, X..., Oswald, Y., Hubacek, K. A global just transition through carbon taxation and revenue recycling. in preparation
- 2023 Oswald, Y., Malleson, N., Suchak, K. An agent-based model of the United States wealth distribution with Ensemble Kalman Filter. in Review and available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4728018

Journal Articles

- 2024 Suchak, K., Kieu, M., Oswald, Y., Ward, J. A., Malleson, N. (2024). Coupling an Agent-Based Model and Ensemble Kalman Filter for Real-Time Crowd Modelling. Royal Society Open Science. in press
- 2024 Oswald, Yannick, Malleson, Nick and Suchak, Keiran (2024) 'An Agent-Based Model of the 2020 International Policy Diffusion in Response to the COVID-19 Pandemic with Particle Filter' Journal of Artificial Societies and Social Simulation 27 (2) 3 10.18564/jasss.5342
- 2023 Oswald, Y., Millward-Hopkins, J., Steinberger, J. K., Owen, A., & Ivanova, D. Luxury-focused carbon taxation improves fairness of climate policy. One Earth, 6(7), 884-898. <https://doi.org/10.1016/j.oneear.2023.05.027>
- 2023 Millward-Hopkins, J., Oswald, Y. Reducing global inequality to secure human wellbeing and climate safety: a modelling study. The Lancet Planetary Health, 7(2), e147-e154. [https://doi.org/10.1016/S2542-5196\(23\)00004-9](https://doi.org/10.1016/S2542-5196(23)00004-9)
- 2021 Millward-Hopkins, J., Oswald, Y. (2021). 'Fair'inequality, consumption and climate mitigation. Environmental Research Letters, 16(3), 034007. 10.1088/1748-9326/abe14f
- 2021 Oswald, Y., Steinberger, J. K., Ivanova, D., Millward-Hopkins, J. (2021). Global redistribution of income and household energy footprints: a computational thought experiment. Global Sustainability, 4, e4.doi:10.1017/sus.2021.1
- 2020 Millward-Hopkins, J., Steinberger, J. K., Rao, N. D., Oswald, Y. Providing decent living with minimum energy: A global scenario. Global Environmental Change, 65, 102168. <https://doi.org/10.1016/j.gloenvcha.2020.102168>
- 2020 Oswald, Y., Owen, A., Steinberger, J. K. Large inequality in international and intranational energy footprints between income groups and across consumption categories. Nature Energy, 5(3), 231-239. <https://doi.org/10.1038/s41560-020-0579-8>

Conference contributions

- 2023 Asher, M., Oswald, Y., Malleson, N. Predicting Pedestrian Counts using Machine Learning. AGILE: GIScience Series, 4, 18 <https://doi.org/10.5194/agile-giss-4-18-2023>
- 2023 Oswald, Y., Schmickl, T. Ultimate Ecology: How a socio-economic game can evolve into a resilient ecosystem of agents. In 2017 IEEE Symposium Series on Computational Intelligence (SSCI) (pp. 1-8). IEEE. 10.1109/SSCI.2017.8280903
- 2015 Elsland, R., Klingler, A. L., Degner, P., Oswald, Y., Wietschel, M. Are current regionalisation approaches sufficient to decompose electricity demand?-A German case study. In 10th Conference on Energy Economics and Technology (ENERDAY). Link

Dissertation

- 2022 Oswald, Y. L. Inequality,(re) distribution and luxury-taxation of international household energy and carbon footprints (Doctoral dissertation, University of Leeds). <https://etheses.whiterose.ac.uk/31106/>

Book chapters

- 2022 Malerba, D., Oswald, Y. To Grow or Not to Grow?: Revisiting Economic Growth as a Sustainable Development Goal in Light of the Degrowth Debate. In *Governing the Interlinkages between the SDGs* (pp. 140-157). Routledge. [Link](#).
- 2022 Oswald, Y. France: International Resources for a Sustainable, Inclusive, and Innovative Future?. In *A Triple Bottom Line Analysis of Global Consumption* (pp. 131-139). Jenny Stanford Publishing.

(Policy-) reports

- 2022 Malerba, D., Chen, X., Feng, K., Hubacek, K., Oswald, Y. The impact of carbon taxation and revenue redistribution on poverty and inequality (No. 11/2022). IDOS Policy Brief. [Link](#).
- 2021 Lorek, S., Gran, C., Lavorel, C., Tomany, S., Oswald, Y. Equitable 1.5-Degree Lifestyles. IDOS Policy Brief. [Link](#).
- 2020 Nakicenovic, N., Grubler, A., Leininger, J., Zimm, C., Clarke, G., Ebi, K., ... Oswald, Y. Innovations for Sustainability: Pathways to an efficient and post-pandemic future. [Link](#).

Popular science

- 2021 Oswald, Y. (2021). Why a more equal world would be easier to decarbonize. *The Conversation*. [Link](#).
- 2020 Oswald, Y. (2020). What do we use energy for? Behind the Paper. *Behavioural and social sciences at Nature*. [Link](#).
- 2019 Vogel, J., Millward-Hopkins, J., Oswald, Y. (2019). We can't expand airports after declaring a climate emergency – let's shift to low-carbon transport instead. *The Conversation*. [Link](#).

TEACHING AND SUPERVISION

PhD Supervision

- 2024 Co-supervision of Suryadepto Nag. Thesis topic: Labour inequalities and international exchange

M.Sc. Supervision

- 2023 2x M.Sc. thesis in Consumer Analytics and Marketing Strategy MSc with a focus on Spatial Machine Learning models

Courses and lectures

2021	Predictive analytics Demonstrating spatial analytics and ABMs.
2020	Foundations in mathematics and statistics Demonstrating basic algebra and statistics
2020	Economics and Sustainability Seminar leader
2020	Modelling and Simulation for Ecological Economics Demonstrator
2020	Soft Skills Seminar Series seminar designed and taught on effective PowerPoint presentations for Graduate Students.
2019	Economics and Sustainability Seminar leader.
2019	Modelling and Simulation for Ecological Economics Demonstrator
2018	Spreadsheet models in Ecological Economics Demonstrator

AWARDS, RECOGNITION AND FUNDING

2022	Recognition of research excellence in PhD thesis by examiner's board
2020	Sustainable Innovation Award by the University of Leeds Sustainability Services for activity of the Climate Entrepreneurs Club. I was co-chair of the volunteer committee which received the award.
2020	Best Postgraduate Researcher Publication Prize by the University of Leeds for Oswald, Y., Owen, A. Steinberger, J.K. 2020 Nat Energy
2019	Best poster and presentation award at IIASA-RITE energy demand workshop/conference, including fellowship stipend (€10 000).
2018	Full Scholarship for PhD studies at the University of Leeds within the 'Living Well Within Limits' projects funded through the Leverhulme Trust.
2016	Erasmus Scholarship for studies at the Utrecht University

INVITED TALKS

2023	University of Maryland on Climate policy in a chaotic and dangerous world
2021	World Inequality Conference, organized by Paris School of Economics, on International energy inequality
2021	University of Duisburg-Essen for the Research Seminar at Institute for Socio-economics. Topic on International energy inequality and redistribution

REVIEW SERVICES

Nature Energy, Ecological Economics, Global Sustainability, Journal of Cleaner Production, Environmental Research Letters, World Development

FURTHER QUALIFICATIONS (A SELECTED FEW)

- 2023 Santa Fe Institute (SFI) Summer School on Complex Systems
- 2021 Santa Fe Institute (SFI) Complexity Interactive (online winter school)
- ongoing Enrolment in B.Sc. Mathematics Distance University of Hagen. Taking courses in pure mathematics and economics for further quantitative skills.

SKILLS

Languages: German (native), English (fluent), Spanish (intermediate), French (basic)

Programming: Python (focus language), Matlab, Pascal (basics), L^AT_EX

Tools: Git/GitHub, VScode, Overleaf, Spyder