Dr. Victor Maus

Researcher

Curriculum Vitae
Friday 14th June, 2024

WU Vienna University of Economics and Business
Institute for Ecological Economics
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EDUCATION

Apr 29, 2016 **PhD in Earth System Science** with focus on machine learning for land use change
Earth System Science Center, National Institute for Space Research (INPE), Brazil

Feb 24, 2011 **MSc in Computational Modelling** with focus on numerical analysis and simulation
Department of Computer Science, Federal University of Juiz de Fora (UFJF), Brazil

Jan 17, 2009 **BSc in Environmental Engineering**
Engineering Department, Franciscan University (UFN), Brazil

CURRENT EMPLOYMENT

Feb 1, 2018 - Today **Researcher - Spatial data science**
Institute for Ecological Economics
Vienna University of Economics and Business (WU), Austria

Sep 15, 2016 - Today **Research Scholar - Big-Earth observation data analytics**
Novel Data Ecosystems for Sustainability Research Group
Advancing Systems Analysis Program
International Institute for Applied Systems Analysis (IIASA), Austria

PREVIOUS EMPLOYMENT

2014 - 2016 **Research Assistant - Big geospatial data**
Institute of Geoinformatics (IFGI), University of Münster (WWU), Germany

Jun - Aug/2013 **Research Assistant in the Young Scientist Summer Program (YSSP)**
International Institute for Applied Systems Analysis (IIASA), Austria

2012 - 2014 **Assistant professor in science and technology**
Federal University of Pampa (UNIPAMPA), Brazil

2011 - 2012 **Research Assistant - remote sensing**
Earth System Science Center, National Institute for Space Research (INPE), Brazil

AWARDS

2023 **Young Scientist Award from the International Society for Mine Surveying (ISM).**
October 2023 https://www.victor-maus.com/assets/img/award-ism-2023.jpg.

2022 **Researcher of the Month Award from the Vienna University of Business and Economics (WU).**
January 2022 https://www.wu.ac.at/en/research/research-portal/news/details-news/detail/mining-poses-danger-to-the-climate-and-biodiversity.

FUNDING

2025-2028 **Research grant EUR 352,000.00** Co-applicant
Future RAW materials demand, supply and sustainability in the face of CLImate Change. Funder: EU Horizon Europe

2024-2024 **Research grant EUR 60,000.00** Principal investigator
Estimating Future Deforestation Impact of Europe's metal consumption. Funder: NGO Fern, France

2024-2024 **Research grant EUR 25,000.00** Principal investigator
Global deforestation impacts of Europe's metal and coal consumption. Funder: Vienna University of Economics and Business (WU), Austria

2023-2024 **Research grant EUR 50,000.00** Co-applicant
FAO Deforestation Drivers. Funder: FAO

2022-2023 **Seed funding EUR 30,000.00** Principal investigator
Support funding to help researchers to prepare a project submission. Funder: Vienna University of Economics and Business (WU), Austria

2021-2022 **Research grant EUR 30,000.00** Principal investigator
Mapping global coal mining production. Funder: The World Bank, USA

2020-2022 **Research grant EUR 249,508.00** Co-applicant
SATFARM-Services-New indicators to remotely track climate-smart agricultural practices: Farm services for farmers and policymakers. Funder: Austrian Research Promotion Agency (FFG), Austria

2019-2020 **Research grant EUR 20,000.00** Principal investigator
Using Satellite Earth Observations for Fine-scale Modelling of Biomass Supply Chains in the Global Economy. Funder: Vienna University of Economics and Business (WU), Austria

2019-2019 **Seed funding EUR 7,500.00** Principal investigator
Support funding to help researchers to prepare a project submission. The funding was used to prepare a project for the Young Independent Researcher Groups call from the Austrian Science Fund (FWF). Funder: Vienna University of Economics and Business (WU), Austria

2013-2014 **Educational project grant BRL 7,200.00** Project leader
Librepampa: Use and dissemination of free software. Funder: Federal University of Pampa (UNIPAMPA), Brazil

2013-2013 **Fellowships IIASA Young Scientists Summer Program Award EUR 5,000.00**
Funder: Center for Management and Strategic Studies (CGEE), Brazil

2009-2011 **Master's full scholarship award BRL 28,800.00**
Funder: Coordination for the Improvement of Higher Education Personnel (CAPES), Brazil

2008-2009 **Scholarship award BRL 6,000.00**
Funder: Research Support Foundation of Rio Grande do Sul (FAPERGS), Brazil

RESEARCH STAYS

May/22 - Dec/24 **Stockholm Resilience Centre, Stockholm University, Sweden**

May/22 - Oct/22 **Department of Sustainable Development, Environmental Science and Engineering, KTH Royal Institute of Technology, Sweden**

TRAINING

2020 **Communication training "Speaking with Confidence and Impact",** Vienna University of Economics and Business, Austria.

2019 **Pedagogical training "The basics of teaching and learning in higher education",** Vienna University of Economics and Business, Austria.

2019 **Leadership training "Setting people in motion: leading and motivating your team",** Vienna University of Economics and Business, Austria.

2013 **Pedagogical Treating "University teaching: methods and evaluation",** Federal University of Pampa, Brazil

IT SKILLS

Operating systems: Linux Debian, Ubuntu, and Red Hat distributions with experience in server and web service management (e.g., Nextcloud, Geoserver, CKAN, Openproject, and R shiny).

Programming languages and databases:

Fluent: R, C, Fortran, Shell script, Pascal, PostgreSQL/PostGIS

Familiar: Python, MySQL/Maria DB, SciDB, JavaScript, YAML

Other software and platforms:

Version control systems: Git/Github and SVN

Package/environment management system: Conda and Docker

Google Earth Engine, QGIS, GDAL, Latex, Overleaf, Libreoffice

LANGUAGE SKILLS

Mother tongue: **Portuguese**

Other languages	Listening	Reading	Spoken interaction	Spoken production	Writing
English	C2	C2	C2	C2	C2
Spanish	C1	C1	B2	B1	A2
German	A2	A2	A1	A1	A1
Finnish	A1	A1	A1	A1	A1

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

TEACHING EXPERIENCE

Year	Course code, name	Credits/h	University
2021	0959, Economy and Sustainability I: Concepts and trends of resource	5.0 ECTS	WU
2020	1064, Transforming the Economy Towards Sustainability I	5.0 ECTS	WU
2020	5939, Sustainable Resource Management I	5.0 ECTS	WU
2019	1200, Sustainable Resource Management I	5.0 ECTS	WU
2013	IT7515, Numerical Analysis	60 h	UNIPAMPA
2013	IT5012, Algorithms and Programming	26 h	UNIPAMPA
2013	IT7200, Introduction to Informatics	60 h	UNIPAMPA
2013	IT4005, Informatics	90 h	UNIPAMPA
2013	IT7403, Informatics	60 h	UNIPAMPA
2013	IT3201, Informatics	60 h	UNIPAMPA
2013	IT8301, Informatics	60 h	UNIPAMPA
2012	IT7422, Introduction to Programming	45 h	UNIPAMPA
2012	IT4049, Environmental Management	30 h	UNIPAMPA
2012	IT4005, Informatics	45 h	UNIPAMPA
2012	IT7403, Informatics	90 h	UNIPAMPA
2012	IT3201, Informatics	30 h	UNIPAMPA

SUPERVISION

Master thesis

2022 **Stefan Trsek**
Topic: Modeling spatially explicit supply chains using Earth observation data
Master's Degree Program in Environmental and Bio-resource Management, University of Natural Resources and Life Sciences (BOKU), Vienna, Austria

2021 **Patricia Urban**
Topic: Climate risk in the food and agriculture supply chains
Master's Degree Program in Socio-Ecological Economics and Policy, Vienna University of Economics and Business, Vienna, Austria

2020 **Lorenz Wimmer**
Title: Shade of green equals social status – environmental inequality in Vienna
Master's Degree Program in Economics, Vienna University of Economics and Business, Vienna, Austria

2020 **Margaret Tess Landon**
Title: Review of consumption-based accounting methods for land-use change emissions
Master's Degree Program in Socio-Ecological Economics and Policy, Vienna University of Economics and Business, Vienna, Austria

2018 **Peter Kronsteiner**
Title: Using containerization to improve reproducibility of model simulations
Master's Degree Program in Computer Science (Geoinformatics), University of Applied Sciences Wiener Neustadt, Wiener Neustadt, Austria

Bachelor thesis

2023 **Humer Matthias,**
Title: Identification of unauthorized mining activities using publicly available concession data and a global data set of mining areas
Bachelor's Degree Program in Socioeconomics, Vienna University of Economics and Business, Vienna, Austria

2022 **Breinbauer Valentin Lois,**
Title: The Extent of Direct Deforestation Caused by Mines, Between 2001-2019, A Global Comparison
Bachelor's Degree Program in Socioeconomics, Vienna University of Economics and Business, Vienna, Austria

2021 **Dieison Morozoli data Silva,**
Title: Remote sensing and machine learning applied to land degradation in the watershed of Puitã river between 2000 and 2018
Bachelor's Degree Program in Surveying Engineering, Federal University of Pampa, Itaqui, Brazil

2021 **Valentin Lois Breinbauer**
Title: The Extent of Mining Driven Direct Deforestation from 2001-2019 – A Global Comparison
Bachelor's Degree Program in Business, Vienna University of Economics and Business, Vienna, Austria

2019 **Jakob Gutschlhofer**
Title: Interactive visualization of input-output models
Bachelor's Degree Program in Business, Vienna University of Economics and Business, Vienna, Austria

2019 **Annika Kluba**
Title: Mining driving global deforestation: a literature review
Bachelor's Degree Program in Business, Vienna University of Economics and Business, Vienna, Austria

Other supervisions

2017 **Radost Stanimirova**
Title: Sensitivity of global pasturelands to climate variation
Peer-reviewed publication doi:10.1029/2019EF001316
Supervised during the Young Scientist Summer Program (YSSP) International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria

2017 **Hadi**
Title: Monitoring Deforestationin Rainforests Using Satellite Data: A Pilot Study from Kalimantan
Peer-reviewed publication doi:10.3390/f9070389
Supervised during the Young Scientist Summer Program (IIASA) International Institute for Applied Systems Analysis, Laxenburg, Austria

SELECTED TALKS

2024 **Global-Scale Mining Land Use Monitoring.** Speaker at the OECD Forum on Responsible Mineral Supply Chains, 21 to 24 May, Paris, France. Slide: https://www.victor-maus.com/assets/talks/20240522-oecd-eo.

2024 **Trends in Deforestation Due to Global Mining.** Speaker at the OECD Forum on Responsible Mineral Supply Chains, 21 to 24 May, Paris, France. Slide: https://www.victor-maus.com/assets/talks/20240522-oecd-ev.

2024 **Global Mining and Sustainability: Leveraging Satellite Earth Observation to Monitor Impacts of Mineral Extraction.** Invited lecture at the Lappeenranta–Lahti University of Technology on 15 May, Lahti, Finland. Slide: https://www.victor-maus.com/assets/talks/2024-05-15-lut.

2023 **Challenges in Big-Earth Observation Data Analytics for Global-Scale Mining Land Use Surveying.** Speaker at the XVIII International Congress for Mine Surveying 26 to 29 October, Xuzhou, China. Slide: https://www.victor-maus.com/assets/talks/2023-10-28-ims.

2023 **Overcoming Data Scarcity in Land Use Monitoring with Time-Weighted Dynamic Time Warping.** Speaker at the Open Earth Monitor–Global Workshop 4 to 6 October. Slide: https://www.victor-maus.com/assets/talks/2023-10-06-oem.

2022 **Mapping global mining activities using open Earth observation data.** Invited speaker at the Global Webinar on Geospatial and Other Data Sources for Environment Statistics: Assessing the Impact of the Economy on the Environment, jointly organized by UNEP and UNODC on 18, 19 and 20 April 2023. Slide: https://www.victor-maus.com/assets/talks/2023-04-19-UN.

2022 **Local vs Global: Challenges in Geoinformatics and Earth observation to support sustainable development.** Invited lecture at the Seminar series of the Department of Sustainable Development, Environmental Science and Engineering (SEED) at the KTH Royal Institute of Technology, 22nd November. Slide: https://www.victor-maus.com/assets/talks/2022-11-22-kth.

2022 **Mapping global mining land-use and its induced deforestation using Earth observation.** Speaker in: ISIE-SEM conference. 19th to 21st September. Slides: https://www.victor-maus.com/assets/talks/2022-09-21-isie-sem-victor-maus.pdf.

2021 **Linking Earth observation to global supply chains to support sustainable development.** GI-Forum seminar at University of Münster, 14th December. Online event. Slide: www.victor-maus.com/assets/talks/2021-12-14-unimuenster-giforum.

2021 **Earth observation to improve global mining information for sustainable development.** Speaker in: World Resource Forum '21, A Green Deal for Sustainable Resources. 12th to 14th October. Online event. Slides: www.victor-maus.com/assets/talks/2021-10-13-wrf-victor-maus.pdf.

2021 **Meeting data requirements: towards global mining monitoring using satellite Earth observation and machine learning.** Speaker in: Royal Geographical Society Annual International Conference '21. 31th August to 3rd September. Online event.

2021 **From map time series to event-based land change detection.** Invited speaker in Symposium: Professorship in Geodata and Earth Observation. University of Bern. 25th to 26th May. Online event.

2020 **Using earth observation data to map economic activities: the example of the global mining sector.** Invited speaker in: online conference of the International Society for Industrial Ecology on "Spatially explicit Socioeconomic Metabolism." 2nd September, 2020. Talk available at https://youtu.be/eV_XU-8tq9A?t=1371

2020 **Creating knowledge to reduce the impacts of global raw material extraction.** Seminar at the KTH Royal Institute of Technology, 18th February 2020, Stockholm, Sweden.

2019 **Satellite Earth observations for impact assessment of global supply chains.** Oral Presentation in: Phi-week, European Space Agency (ESA) Centre for Earth Observation, 9th - 13th September, Frascati, Italy.

2019 **Using global crop maps to improve the estimation of impacts associated with biomass production.** Oral Presentation in: II Austrian Conference on International Resource Politics - Resources for a social-ecological transformation. 28th February - 2nd March, Innsbruck University, Austria.

2017 **dtwSat: An R package for land cover classification using satellite image time series.** Oral Presentation in: Open Science Conference 2017, European Space Agency (ESA) Centre for Earth Observation, 25th - 28th September, Frascati, Italy.

2016 **Big Earth observation data analytics for land use and land cover change in the Brazilian Amazon.** Invited speaker in: Doctoral program in interdisciplinary environmental sciences Annual Meeting, University of Helsinki, 10th – 11th March, Helsinki, Finland.

2016 **Big Earth observation data analytics: matching requirements to system architectures.** Lecture at the Linköping University, 18th August, Sweden.

2016 **Land cover monitoring using satellite image time series.** Invited lecture at University of Münster, 12th July, Münster, Germany.

2016 **Large-scale agricultural mapping using big earth observation data.** Oral Presentation in: Brazil-Sweden Excellence Seminar, Coordination for the Improvement of Higher Education Personnel (CAPES), 16th - 20th May, Brasília, Brazil.

LIST OF PUBLICATIONS

Google Scholar: **citations 1343, h-index 16**
Scopus: **citations 898, h-index 14**

Submitted articles

1. S. Luckeneder, V. **Maus**, J. Siqueira-Gay, T. Krisztin, and M. Kuhn. Transient economic benefit and persistent forest loss: legacy of the Brazilian mining sector (Under review in Nature Comunications).
2. S. Giljum, V. **Maus**, L. Sonter, S. Luckeneder, T. Werner, S. Lutter, J. Gershenzon, M. Cole, and A. Bebbington. Global metal mining is a growing driver of environmental change (Under review in Nature Reviews Earth & Environment).
3. X. Sun, S. Giljum, V. ±textbfMaus, A. Schomberg, S. Zhang, and F. You. Robust Assessment of Lithium Mining Impacts Embodied in Global Supply Chain Requires Spatially Explicit Analyses (Under review in Nature Sustainability).

Peer-reviewed articles

1. V. ★ **Maus** and T. T. Werner. Impacts for half of the world's mining areas are undocumented. *Nature* **625**(7993) (2024), 26–29. DOI: 10.1038/d41586-023-04090-3.
2. T. T. Werner, T. Toumbourou, V. **Maus**, M. C. Lukas, L. J. Sonter, M. Muhdar, R. K. Runting, and A. Bebbington. Patterns of infringement, risk, and impact driven by coal mining permits in Indonesia. *Ambio* (2023). DOI: 10.1007/s13280-023-01944-y.
3. B. Crona, G. Parlato, S. Lade, I. Fetzer, and V. **Maus**. Going beyond carbon: An Earth system impact score to better capture corporate and investment impacts on the earth system. *Journal of Cleaner Production* **429** (2023), 139523. DOI: 10.1016/j.jclepro.2023.139523.
4. L. Sonter, M. Maron, J. W. Bull, S. Giljum, S. Luckeneder, V. **Maus**, E. McDonald-Madden, S. A. Northey, L. E. Sánchez, R. Valenta, P. Visconti, T. T. Werner, and J. E. M. Watson. How to fuel an energy transition with ecologically responsible mining. *PNAS* **120**(35) (2023). DOI: 10.1073/pnas.2307006120.
5. S. Jasansky, M. Lieber, S. Giljum, and V. **Maus**. An open database on global coal and metal mine production. *Scientific Data* **10**(1) (2023), 52. DOI: 10.1038/s41597-023-01965-y.
6. V. ★ **Maus**, S. Giljum, D. M. da Silva, J. Gutschlhofer, R. P. da Rosa, S. Luckeneder, S. L. B. Gass, M. Lieber, and I. McCallum. An update on global mining land use. *Scientific Data* **9**(1) (2022), 433. DOI: 10.1038/s41597-022-01547-4.
7. S. ★Giljum, V. **Maus**, N. Kuschnig, S. Luckeneder, M. Tost, L. Sonter, and A. J. Bebbington. A pantropical assessment of deforestation caused by industrial mining. *PNAS* **119**(38) (2022). DOI: 10.1073/pnas.2118273119.

8. S. Luckeneder, S. Giljum, A. Schaffartzik, V. **Maus**, and M. Tost. Surge in global metal mining threatens vulnerable ecosystems. *Global Environmental Change* **69** (2021), 102303. DOI: 10.1016/j.gloenvcha.2021.102303.

9. V. **Maus**, S. Giljum, J. Gutschlhofer, D. M. da Silva, S. L. Gass, S. Luckeneder, M. Lieber, and I. McCallum. A global-scale data set of mining areas. *Scientific Data* **7**(1) (2020), 289. DOI: 10.1038/s41597-020-00624-w.

10. V. ★ **Maus**, G. Câmara, M. Appel, and E. Pebesma. dtwSat: Time-Weighted Dynamic Time Warping for Satellite Image Time Series Analysis in R. *Journal of Statistical Software* **88**(5) (2019), 1–31. DOI: 10.18637/jss.v088.i05.

11. R. Stanimirova, P. Arévalo, R. K. Kaufmann, V. **Maus**, M. Lesiv, P. Havlík, and M. A. Friedl. Sensitivity of global pasturelands to climate variation. *Earth's Future* (2019). DOI: 10.1029/2019EF001316.

12. M. Bruckner, T. Häyhä, S. Giljum, V. **Maus**, G. Fischer, S. Tramberend, and J. Börner. Quantifying the global cropland footprint of the European Union's non-food bioeconomy. *Environmental Research Letters* **14**(4) (2019), 045011. DOI: 10.1088/1748-9326/ab07f5.

13. M. Bruckner, R. Wood, D. Moran, N. Kuschnig, H. Wieland, V. **Maus**, and J. Börner. FABIO–The Construction of the Food and Agriculture Biomass Input-Output Model. *Environmental Science & Technology* **53**(19) (2019), 11302–11312. DOI: 10.1021/acs.est.9b03554.

14. Hadi, A. Krasovskii, V. **Maus**, P. Yowargana, S. Pietsch, and M. Rautiainen. Monitoring Deforestation in Rainforests Using Satellite Data: A Pilot Study from Kalimantan, Indonesia. *Forests* **9**(7) (2018). DOI: 10.3390/f9070389.

15. L. See, J. C. Laso Bayas, D. Schepaschenko, C. Perger, C. Dresel, V. **Maus**, C. Salk, J. Weichselbaum, M. Lesiv, I. McCallum, I. Moorthy, and S. Fritz. LACO-Wiki: A New Online Land Cover Validation Tool Demonstrated Using GlobeLand30 for Kenya. *Remote Sensing* **9**(7) (2017). DOI: 10.3390/rs9070754.

16. A. M. Maciel, L. Vinhas, G. Camara, V. **Maus**, and L. F. F. G. de Assis. STILF - A spatiotemporal interval logic formalism for reasoning about events in remote sensing data. In: *Proceedings of the Brazilian Symposium of Remote Sensing*. Santos, Brazil, 2017, pp.4558–4565. https://proceedings.galoa.com.br/sbsr/trabalhos/stilf-a-spatiotemporal-interval-logic-formalism-for-reasoning-about-events-in-remote-sensing-data.

17. V. J. M. Furlan, V. **Maus**, I. Batista, and N. M. Bandarra. Production of docosahexaenoic acid by Aurantiochytrium sp. ATCC PRA-276. *Brazilian Journal of Microbiology* **48**(2) (2017), 359–365. DOI: 10.1016/j.bjm.2017.01.001.

18. V. ★ **Maus**, G. Camara, R. Cartaxo, A. Sanchez, F. M. Ramos, and G. R. de Queiroz. A Time-Weighted Dynamic Time Warping Method for Land-Use and Land-Cover Mapping. *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* **9**(8) (2016), 3729–3739. DOI: 10.1109/JSTARS.2016.2517118.

19. G. Camara, L. F. Assis, G. Ribeiro, K. R. Ferreira, E. Llapa, L. Vinhas, V. **Maus**, A. Sanchez, and R. C. Souza. Big Earth Observation Data Analytics: Matching Requirements to System Architectures. In: *Proceedings of the 5th ACM SIGSPATIAL International Workshop on Analytics for Big Geospatial Data*. BigSpatial '16. Burlingame, California: ACM, 2016, pp.1–6. DOI: 10.1145/3006386.3006393.

20. A. M. Maciel, G. Camara, V. **Maus**, L. Vinhas, and A. Sanchez. Using dynamic geospatial ontologies to support information extraction from big Earth observation data sets. In: *International Conference on GIScience*. Montreal, Canada, 2016, pp.41–44. DOI: 10.21433/B3115w54k25v.

21. L. F. Assis, G. Ribeiro, K. R. Ferreira, L. Vinhas, E. Llapa, A. Sanchez, V. **Maus**, and G. Camara. Big data streaming for remote sensing time series analytics using MapReduce. In: *Proceedings of the Brazilian Symposium on Geoinformatics*. Campos do Jordão, Brazil: Brazilian J. of cartography, 2016, pp.228–239. www.seer.ufu.br/index.php/revistabrasileiracartografia/article/view/44011.

22. V. J. M. Furlan, M. do Castelo Paulo, V. **Maus**, J. Ferreira, I. Batista, and N. M. Bandarrac. Production of docosahexaenoic acid (DHA) from Thraustochytrium sp. ATCC 26185 using different nitrogen

concentrations. *Boletim Centro de Pesquisa de Processamento de Alimentos* **34**(2) (2016), 1–11. DOI: 10.5380/cep.v34i2.53189.

23. L. See, D. Schepaschenko, M. Lesiv, I. McCallum, S. Fritz, A. Comber, C. Perger, C. Schill, Y. Zhao, V. **Maus**, and et al. Building a hybrid land cover map with crowdsourcing and geographically weighted regression. *ISPRS Journal of Photogrammetry and Remote Sensing* **103** (2015). Global Land Cover Mapping and Monitoring, 48–56. DOI: 10.1016/j.isprsjprs.2014.06.016.

24. V. **Maus**, E. M. Toledo, and L. P. da Silva Barra. Contaminant transport in porous media under biodegradation and non-equilibrium sorption reactions. In: *Proceedings of the Iberian Latin American Congress on Computational Methods in Engineering*. Ouro Preto, Brazil, 2011, pp.1–13. http://plutao.sid.inpe.br/col/dpi.inpe.br/plutao/2011/11.23.19.56/doc/maus_contaminant.pdf.

25. V. **Maus**, A. B. da Costa, and A. A. Righes. Tratamento do lixiviado de aterro de resíduos sólidos urbanos por processo Fenton (Landfill leachate treatment using the advanced treatment processes Fenton). *Tecno-lógica* **13**(1) (2009). (In Portuguese), 52–59. DOI: 10.17058/tecnolog.v13i1.931.

Software and data

1. V. **Maus**. *twdtw: Time-Weighted Dynamic Time Warping*. Version 1.0-1. Comprehensive R Archive Network (CRAN). 2023. https://CRAN.R-project.org/package=twdtw.

2. V. **Maus**. *dtwSat: Time-Weighted Dynamic Time Warping for Satellite Image Time Series Analysis*. Version 1.0.0. Comprehensive R Archive Network (CRAN). 2023. https://doi.org/10.5281/zenodo.8369539.

3. B. Crona, G. Parlato, S. Lade, I. Fetzer, and V. **Maus**. Going beyond carbon: An "Earth System Impact" score to better capture corporate and investment impacts on the Earth system. Version V1. *Harvard Dataverse* (2023). DOI: 10.7910/DVN/HPYDKW.

4. S. Jasansky, M. Lieber, S. Giljum, and V. **Maus**. Open database on global coal and metal mine production. Version 1. *Zenodo* (2023). DOI: 10.5281/zenodo.6325108.

5. V. **Maus**, D. M. da Silva, J. Gutschlhofer, R. da Rosa, S. Giljum, S. L. B. Gass, S. Luckeneder, M. Lieber, and I. McCallum. Global-scale mining polygons. Version 2. *PANGAEA* (2022). DOI: 10.1594/PANGAEA.942325.

6. V. **Maus**, N. Kuschnig, S. Luckeneder, and S. Giljum. *A set of essential variables for modelling environmental impacts of global mining land use*. Version 1. 2021. https://doi.pangaea.de/10.1594/PANGAEA.928573.

7. V. **Maus**, S. Giljum, J. Gutschlhofer, D. M. da Silva, S. L. Gass, S. Luckeneder, M. Lieber, and I. McCallum. *Global-scale mining polygons*. Version 1. 2020. DOI: 10.1594/PANGAEA.910894.

8. G. Jakob and V. **Maus**. *Web application for mining area polygonization*. Version 1.2. 2020. DOI: 10.5281/zenodo.3580740.

Other academic works

1. M. Kramer, T. Kind-Rieper, R. Munayer, S. Giljum, R. Masselink, P. van Ackern, V. **Maus**, S. Luckeneder, N. Kuschnig, F. Costa, and L. Rüttinger. *Extracted forests: unearthing the role of mining-related deforestation as a driver of global deforestation*. Tech. rep. 2023. https://www.wwf.de/fileadmin/fm-wwf/Publikationen-PDF/Wald/WWF-Studie-Extracted-Forests.pdf.

2. L. Wimmer, V. **Maus**, and S. Luckeneder. Investigating social inequality of urban green space distribution using Sentinel-2: the case of Vienna. *Preprint submitted to the journal Remote Sensing Applications: Society and Environment available at the Ecological Economics Working Paper Series at the Vienna University of Economics and Business*. Ecological Economic Papers (46/2023) (2023), 1–34. DOI: 10.57938/d7d6e6d9-2e14-4448-999a-2963c725e6f7.

3. N.-E. Tsendbazar, A. Tarko, L. Li, M. Herold, M. Lesiv, S. Fritz, and V. **Maus**. *Copernicus Global Land Service: Land Cover 100m: version 3 Globe 2015-2019: Validation Report*. Tech. rep. Version Dataset v3.0, doc issue 1.10. 2021. DOI: 10.5281/zenodo.4723975.

4. S. Fritz, O. Danylo, V. **Maus**, L. See, F. Hofhansl, I. McCallum, and M. Obersteiner. *Independent confirmation of Brazil's rapidly rising deforestation in 2019*. Respose to Escobar (2019) Brazilian president attacks deforestation data. Science Vol. 365, Issue 6452, pp. 419. 2019. https://science.sciencemag.org/content/365/6452/419/tab-e-letters.
5. V. **Maus**. "Land use and land cover monitoring using remote sensing image time series". Doctor of Philosophy in Earth System Science. PhD thesis. São José dos Campos, Brazil: National Institute for Space Research, 2016.
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