

Academic CV
Thomas Gasser

PERSONAL INFORMATION

Nationality: French

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MAIN AREAS OF RESEARCH

Earth system: reduced-complexity modelling of its processes and feedbacks, including interactions with its human components in the climate mitigation and climate impact dimensions.

Climate change, notably probabilistic climate projections, development and use of **climate scenarios**, and attribution of historical contributions to climate change.

Carbon cycle, with a focus on the land carbon cycle and **land-use change** emissions.

CURRENT POSITION

2022–now: **Senior Research scholar** at *International Institute for Applied Systems Analysis (IIASA)*, Austria; coordinator of the “Earth system modelling” research theme.

PREVIOUS POSITIONS

2016–2021: **Research scholar** at *International Institute for Applied Systems Analysis (IIASA)*, Austria

2016: **Guest researcher** at *Centre for International Climate and Environmental Research—Oslo (CICERO)*, Norway

2014–2016: **Postdoctoral fellow** at *Laboratoire des Sciences du Climat et de l'Environnement (LSCE), Institut Pierre-Simon Laplace (IPSL), Université Versailles Saint-Quentin (UVSQ)*, France

2011–2014: **Research engineer** at *Centre International de Recherche en Environnement et Développement (CIRED), Centre National de la Recherche Scientifique (CNRS)*, France

2009: **Research intern** at *Laboratoire des Sciences du Climat et de l'Environnement (LSCE), Institut Pierre-Simon Laplace (IPSL), Commissariat à l'Énergie Atomique (CEA)*, France

EDUCATION

2014: **Ph.D.** (climate sciences), *Université Pierre et Marie Curie (Paris VI)*, France; on the “Regionalized Attribution of the Anthropogenic Causes of Climate Change;” supervised by Philippe Ciais and Jean-Charles Hourcade

2011: **Ponts ParisTech degree** (M.Sc. in environmental engineering), *Ponts ParisTech*, France

2011: **École Polytechnique degree** (multidisciplinary M.Sc.), *École Polytechnique*, France

HONORS & AWARDS

2015: **PhD thesis prize**, awarded by the French administrative region “Val-de-Marne”

2010: **Outstanding Student Paper Award (OSPA)**, for oral presentation at the *AGU Fall Meeting*

2009: **Research internship prize**, awarded by *École Polytechnique*

RESEARCH FUNDINGS

- 2022: **RESCUE**, HEU RIA project funded by the *European Commission*;
Principal investigator, 4 years, 465 k€ of 8 M€
- 2021: **Arctic MaPS**, project funded by the *Quadrature Climate Foundation*;
Subcontractor to *Woodwell Climate Research Center*, 3 years, 34 k€
- 2021: **PROVIDE**, H2020 RIA project funded by the *European Commission*;
Subcontractor to LSCE, 3 years, 60 k€
- 2021: **ESM2025**, H2020 RIA project funded by the *European Commission*;
Principal investigator, 4 years, 604 k€ of 12 M€
- 2019: **CONSTRAIN**, H2020 RIA project funded by the *European Commission*;
Principal investigator, 4 years, 55 k€ of 8 M€
- 2019: **ERM**, stand-alone project funded by the *Austrian Science Fund (FWF)*;
Investigator, 3 years, 363 k€
- 2018: **Nunataryuk**, H2020 RIA project funded by the *European Commission*;
Deputy principal investigator, 6 years, 170 k€ of 11.5 M€
- 2016: **Visiting researcher grant** (#249972), funded by the *Research Council of Norway*;
Principal investigator, 6 months, ~22 k€

PEER-REVIEWED PUBLICATIONS (as of Feb. 3, 2023)

- [55] Powis, C. M., S. M. Smith, J. C. Minx & **T. Gasser**. "Quantifying global carbon dioxide removal deployment." *Environmental Research Letters* 18: 024022 (2023). [doi:10.1088/1748-9326/acb450](https://doi.org/10.1088/1748-9326/acb450).
- [54] Schwingshackl, C., W. A. Obermeier, S. Bultan, G. Grassi, J. G. Canadell, P. Friedlingstein, **T. Gasser**, R. A. Houghton, W. A. Kurz, S. Sitch & J. Pongratz. "Differences in land-based mitigation estimates reconciled by separating natural and land-use CO2 fluxes at the country level." *One Earth* 5: 1367-1376 (2022). [doi:10.1016/j.oneear.2022.11.009](https://doi.org/10.1016/j.oneear.2022.11.009).
- [53] Smith, C. J. & **T. Gasser**. "Modeling the non-CO2 contribution to climate change." *One Earth* 5: 1330-1335 (2022). [doi:10.1016/j.oneear.2022.11.007](https://doi.org/10.1016/j.oneear.2022.11.007).
- [52] Bossy, T., **T. Gasser** & P. Ciais. "Pathfinder v1.0.1: a Bayesian-inferred simple carbon-climate model to explore climate change scenarios." *Geoscientific Model Development* 15: 8831-8868 (2022). [doi:10.5194/gmd-15-8831-2022](https://doi.org/10.5194/gmd-15-8831-2022).
- [51] Friedlingstein, P., M. O'Sullivan, M. W. Jones, R. M. Andrew, L. Gregor, J. Hauck, C. Le Quéré, I. T. Lujckx, A. Olsen, G. P. Peters, W. Peters, J. Pongratz, C. Schwingshackl, S. Sitch, J. G. Canadell, P. Ciais, R. B. Jackson, S. R. Alin, R. Alkama, A. Arneeth, V. K. Arora, N. R. Bates, M. Becker, N. Bellouin, H. C. Bittig, L. Bopp, F. Chevallier, L. P. Chini, M. Cronin, W. Evans, S. Falk, R. A. Feely, T. Gasser, M. Gehlen, T. Gkritzalis, L. Gloege, G. Grassi, N. Gruber, Ö. Gürses, I. Harris, M. Hefner, R. A. Houghton, G. C. Hurtt, Y. Iida, T. Ilyina, A. K. Jain, A. Jersild, K. Kadono, E. Kato, D. Kennedy, K. Klein Goldewijk, J. Knauer, J. I. Korsbakken, P. Landschützer, N. Lefèvre, K. Lindsay, J. Liu, Z. Liu, G. Marland, N. Mayot, M. J. McGrath, N. Metz, N. M. Monacci, D. R. Munro, S. I. Nakaoka, Y. Niwa, K. O'Brien, T. Ono, P. I. Palmer, N. Pan, D. Pierrot, K. Pocock, B. Poulter, L. Resplandy, E. Robertson, C. Rödenbeck, C. Rodriguez, T. M. Rosan, J. Schwinger, R. Séférian, J. D. Shutler, I. Skjelvan, T. Steinhoff, Q. Sun, A. J. Sutton, C. Sweeney, S. Takao, T. Tanhua, P. P. Tans, X. Tian, H. Tian, B. Tilbrook, H. Tsujino, F. Tubiello, G. R. van der Werf, A. P. Walker, R. Wanninkhof, C. Whitehead, A. Willstrand Wranne, R. Wright, W. Yuan, C. Yue, X. Yue, S. Zaehle, J. Zeng & B. Zheng. "Global Carbon Budget 2022." *Earth System Science. Data* 14: 4811-4900 (2022). [doi:10.5194/essd-14-4811-2022](https://doi.org/10.5194/essd-14-4811-2022).

- [50] Xu, S., R. Wang, **T. Gasser**, P. Ciais, J. Peñuelas, Y. Balkanski, O. Boucher, I. A. Janssens, J. Sardans, J. H. Clark, J. Cao, X. Xing, J. Chen, L. Wang, X. Tang & R. Zhang. "Delayed use of bioenergy crops might threaten climate and food security." *Nature* 609: 299-306 (2022). [doi:10.1038/s41586-022-05055-8](https://doi.org/10.1038/s41586-022-05055-8).
- [49] He, M., S. Piao, C. Huntingford, H. Xu, X. Wang, A. Bastos, J. Cui & **T. Gasser**. "Amplified warming from physiological responses to carbon dioxide reduces the potential of vegetation for climate change mitigation." *Communications Earth & Environment* 3: 160 (2022). [doi:10.1038/s43247-022-00489-4](https://doi.org/10.1038/s43247-022-00489-4).
- [48] Liu, Y., S. Piao, D. Makowski, P. Ciais, **T. Gasser**, J. Song, S. Wan, J. Peñuelas & I. A. Janssens. "Data-driven quantification of nitrogen enrichment impact on Northern Hemisphere plant biomass." *Environmental Research Letters* (2022). [doi:10.1088/1748-9326/ac7b38](https://doi.org/10.1088/1748-9326/ac7b38).
- [47] Fu, B., J. Li, **T. Gasser**, P. Ciais, S. Piao, S. Tao, G. Shen, Y. Lai, L. Han & B. Li. "Climate Warming Mitigation from Nationally Determined Contributions." *Advances in Atmospheric Sciences* (2022). [doi:10.1007/s00376-022-1396-8](https://doi.org/10.1007/s00376-022-1396-8).
- [46] **Gasser, T.**, P. Ciais & S. L. Lewis. "How the Glasgow Declaration on Forests can help keep alive the 1.5 °C target." *Proceedings of the National Academy of Sciences* 119: e2200519119 (2022). [doi:10.1073/pnas.2200519119](https://doi.org/10.1073/pnas.2200519119).
- [45] Friedlingstein, P., M. W. Jones, M. O'Sullivan, R. M. Andrew, D. C. E. Bakker, J. Hauck, C. Le Quéré, G. P. Peters, W. Peters, J. Pongratz, S. Sitch, J. G. Canadell, P. Ciais, R. B. Jackson, S. R. Alin, P. Anthoni, N. R. Bates, M. Becker, N. Bellouin, L. Bopp, T. T. T. Chau, F. Chevallier, L. P. Chini, M. Cronin, K. I. Currie, B. Decharme, L. M. Djeutchouang, X. Dou, W. Evans, R. A. Feely, L. Feng, **T. Gasser**, D. Gilfillan, T. Gkritzalis, G. Grassi, L. Gregor, N. Gruber, Ö. Gürses, I. Harris, R. A. Houghton, G. C. Hurtt, Y. Iida, T. Ilyina, I. T. Luijkx, A. Jain, S. D. Jones, E. Kato, D. Kennedy, K. K. Goldewijk, J. Knauer, J. I. Korsbakken, A. Körtzinger, P. Landschützer, S. K. Lauvset, N. Lefèvre, S. Lienert, J. Liu, G. Marland, P. C. McGuire, J. R. Melton, D. R. Munro, J. E. M. S. Nabel, S.-I. Nakaoka, Y. Niwa, T. Ono, D. Pierrot, B. Poulter, G. Rehder, L. Resplandy, E. Robertson, C. Rödenbeck, T. M. Rosan, J. Schwinger, C. Schwingshackl, R. Séférian, A. J. Sutton, C. Sweeney, T. Tanhua, P. P. Tans, H. Tian, B. Tilbrook, F. Tubiello, G. R. van der Werf, N. Vuichard, C. Wada, R. Wanninkhof, A. J. Watson, D. Willis, A. J. Wiltshire, W. Yuan, C. Yue, X. Yue, S. Zaehle & J. Zeng. "Global Carbon Budget 2021." *Earth System Science Data* 14: 1917-2005 (2022). [doi:10.5194/essd-14-1917-2022](https://doi.org/10.5194/essd-14-1917-2022).
- [44] Melnikova, I., O. Boucher, P. Cadule, K. Tanaka, **T. Gasser**, T. Hajima, Y. Quilcaille, H. Shiogama, R. Séférian, K. Tachiiri, N. Vuichard, T. Yokohata & P. Ciais. "Impact of bioenergy crop expansion on climate-carbon cycle feedbacks in overshoot scenarios." *Earth System Dynamics* 13: 779-794 (2022). [doi:10.5194/esd-13-779-2022](https://doi.org/10.5194/esd-13-779-2022).
- [43] Allen, M.R., G. P. Peters, K. P. Shine, C. Azar, P. Balcombe, O. Boucher, M. Cain, P. Ciais, W. Collins, P. M. Forster, D. J. Frame, P. Friedlingstein, C. Fyson, **T. Gasser**, B. Hare, S. Jenkins, S. P. Hamburg, D. J. A. Johansson, J. Lynch, A. Macey, J. Morfeldt, A. Nauels, I. Ocko, M. Oppenheimer, S. W. Pacala, R. Pierrehumbert, J. Rogelj, M. Schaeffer, C. F. Schleussner, D. Shindell, R. B. Skeie, S. M. Smith & K. Tanaka. "Indicate separate contributions of long-lived and short-lived greenhouse gases in emission targets." *npj Climate and Atmospheric Science* 5 (2022). [doi:10.1038/s41612-021-00226-2](https://doi.org/10.1038/s41612-021-00226-2).
- [42] Treharne, R., B. M. Rogers, **T. Gasser**, E. MacDonald & S. Natali. "Identifying Barriers to Estimating Carbon Release From Interacting Feedbacks in a Warming Arctic." *Frontiers in Climate* 3 (2022). [doi:10.3389/fclim.2021.716464](https://doi.org/10.3389/fclim.2021.716464).
- [41] Qiu, C., P. Ciais, D. Zhu, B. Guenet, J. Chang, N. Chaudhary, T. Kleinen, X. Y. Li, J. Müller, Y. Xi, W. Zhang, A. Ballantyne, S. C. Brewer, V. Brovkin, D. J. Charman, A. Gustafson, A. V. Gallego-Sala, **T. Gasser**, J. Holden, F. Joos, M. J. Kwon, R. Lauerwald, P. A. Miller, S. Peng, S. Page, B. Smith, B. D. Stocker, A. B. K. Sannel, E. Salmon, G. Schurgers, N. J. Shurpali, D. Wårlind & S. Westermann. "A strong mitigation scenario maintains climate neutrality of northern peatlands." *One Earth* 5: 86-97 (2022). [doi:10.1016/j.oneear.2021.12.008](https://doi.org/10.1016/j.oneear.2021.12.008).
- [40] Boucher, O., A. Borella, **T. Gasser** & D. Hauglustaine. "On the contribution of global aviation to the CO2 radiative forcing of climate." *Atmospheric Environment* 267: e118762 (2021). [doi:10.1016/j.atmosenv.2021.118762](https://doi.org/10.1016/j.atmosenv.2021.118762).

- [39] Wang, J., W. Li, P. Ciais, L. Z. X. Li, J. Chang, D. Goll, **T. Gasser**, X. Huang, N. Devaraju & O. Boucher. "Global cooling induced by biophysical effects of bioenergy crop cultivation." *Nature Communications* 12: e7255 (2021). [doi:10.1038/s41467-021-27520-0](https://doi.org/10.1038/s41467-021-27520-0).
- [38] Zhu, L., P. Ciais, A. Bastos, A. P. Ballantyne, F. Chevallier, **T. Gasser**, M. Kondo, J. Pongratz, C. Rödenbeck & W. Li. "Decadal variability in land carbon sink efficiency." *Carbon Balance and Management* 16: 15 (2021). [doi:10.1186/s13021-021-00178-3](https://doi.org/10.1186/s13021-021-00178-3).
- [37] Nicholls, Z., M. Meinshausen, J. Lewis, M. Rojas Corradi, K. Dorheim, **T. Gasser**, R. Gieseke, A. P. Hope, N. J. Leach, L. A. McBride, Y. Quilcaille, J. Rogelj, R. J. Salawitch, B. H. Samset, M. Sandstad, A. Shiklomanov, R. B. Skeie, C. J. Smith, S. J. Smith, X. Su, J. Tsutsui, B. Vega-Westhoff & D. L. Woodard. "Reduced complexity Model Intercomparison Project Phase 2: Synthesizing Earth system knowledge for probabilistic climate projections." *Earth's Future* 9: e2020EF001900 (2021). [doi:10.1029/2020EF001900](https://doi.org/10.1029/2020EF001900).
- [36] Melnikova, I., O. Boucher, P. Cadule, P. Ciais, **T. Gasser**, Y. Quilcaille, H. Shiogama, K. Tachiiri, T. Yokohata & K. Tanaka. "Carbon Cycle response to temperature overshoot beyond 2°C: An analysis of CMIP6 models." *Earth's Future* 9: e2020EF001967 (2021). [doi:10.1029/2020EF001967](https://doi.org/10.1029/2020EF001967).
- [35] Fu, B., B. Li, **T. Gasser**, S. Tao, P. Ciais, S. Piao, Y. Balkanski, W. Li, T. Yin, L. Han, Y. Han, S. Peng & J. Xu. "The contributions of individual countries and regions to the global radiative forcing." *Proceedings of the National Academy of Sciences* 118: e2018211118 (2021). [doi:10.1073/pnas.2018211118](https://doi.org/10.1073/pnas.2018211118).
- [34] Ciais, P., Y. Yao, **T. Gasser**, A. Baccini, Y. Wang, R. Lauerwald, S. Peng, A. Bastos, W. Li, P. A. Raymond, J. Canadell, G. Peters, R. Andres, J. Chang, C. Yue, A. J. Dolman, V. Haverd, J. Hartmann, G. Laruelle, A. G. Konings, A. W. King, Y. Liu, S. Luyssaert, F. Maignan, P. K. Patra, A. Pregon, P. Regnier, J. Pongratz, B. Poulter, A. Shvidenko, R. Valentini, R. Wang, G. Broquet, Y. Yin, J. Zscheischler, B. Guenet, D. S. Goll, A. Ballantyne, H. Yang, C. Qiu & D. Zhu. "Empirical estimates of regional carbon budgets imply reduced global soil heterotrophic respiration." *National Science Review*, nwa145 (2021). [doi:10.1093/nsr/nwaa145](https://doi.org/10.1093/nsr/nwaa145).
- [33] Chang, J., P. Ciais, **T. Gasser**, P. Smith, M. Herrero, P. Havlik, M. Obersteiner, B. Guenet, D. S. Goll, W. Li, V. Naipal, S. Peng, C. Qiu, H. Tian, N. Viovy, C. Yue & D. Zhu. "Climate warming from managed grasslands cancels the cooling effect of carbon sinks in sparsely grazed and natural grasslands." *Nature Communications* 12: 118 (2021). [doi:10.1038/s41467-020-20406-7](https://doi.org/10.1038/s41467-020-20406-7).
- [32] Friedlingstein, P., M. O'Sullivan, M. W. Jones, R. M. Andrew, J. Hauck, A. Olsen, G. P. Peters, W. Peters, J. Pongratz, S. Sitch, C. Le Quéré, J. G. Canadell, P. Ciais, R. B. Jackson, S. Alin, L. E. O. C. Aragão, A. Arneeth, V. Arora, N. R. Bates, M. Becker, A. Benoit-Cattin, H. C. Bittig, L. Bopp, S. Bultan, N. Chandra, F. Chevallier, L. P. Chini, W. Evans, L. Florentie, P. M. Forster, **T. Gasser**, M. Gehlen, D. Gilfillan, T. Gkritzalis, L. Gregor, N. Gruber, I. Harris, K. Hartung, V. Haverd, R. A. Houghton, T. Ilyina, A. K. Jain, E. Joetzjer, K. Kadono, E. Kato, V. Kitidis, J. I. Korsbakken, P. Landschützer, N. Lefèvre, A. Lenton, S. Lienert, Z. Liu, D. Lombardozzi, G. Marland, N. Metz, D. R. Munro, J. E. M. S. Nabel, S.-I. Nakaoka, Y. Niwa, K. O'Brien, T. Ono, P. I. Palmer, D. Pierrot, B. Poulter, L. Resplandy, E. Robertson, C. Rödenbeck, J. Schwinger, R. Séférian, I. Skjelvan, A. J. P. Smith, A. J. Sutton, T. Tanhua, P. P. Tans, H. Tian, B. Tilbrook, G. van der Werf, N. Vuichard, A. P. Walker, R. Wanninkhof, A. J. Watson, D. Willis, A. J. Wiltshire, W. Yuan, X. Yue & S. Zaehle. "Global Carbon Budget 2020." *Earth System Science Data* 12: 3269-3340 (2020). [doi:10.5194/essd-12-3269-2020](https://doi.org/10.5194/essd-12-3269-2020).
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- [30] **Gasser, T.**, L. Crepin, Y. Quilcaille, R. A. Houghton, P. Ciais, & M. Obersteiner. "Historical CO2 emissions from land-use and land-cover change and their uncertainty." *Biogeosciences* 17: 4075-4101 (2020). [doi:10.5194/bg-17-4075-2020](https://doi.org/10.5194/bg-17-4075-2020).

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- [28] Li, W., B. Li, S. Tao, P. Ciais, S. L. Piao, G. Shen, S. Peng, R. Wang, **T. Gasser**, Y. Balkanski, L. Li, B. Fu, T. Yin, X. Li, J. An, Y. Han. "Missed atmospheric organic phosphorus emitted by terrestrial plants, part 2: Experiment of volatile phosphorus." *Environmental Pollution* 258:113728 (2020). [doi:10.1016/j.envpol.2019.113728](https://doi.org/10.1016/j.envpol.2019.113728).
- [27] Lade, S. J., J. Norberg, J. M. Anderies, C. Beer, S. E. Cornell, J. F. Donges, I. Fetzer, **T. Gasser**, K. Richardson, J. Rockström & W. Steffen. "Potential feedbacks between loss of biosphere integrity and climate change." *Global Sustainability* 2:e21 (2019). [doi:10.1017/sus.2019.18](https://doi.org/10.1017/sus.2019.18).
- [26] Liu, Y., S. L. Piao, **T. Gasser**, P. Ciais, H. Yang, H. Wang, T. F. Keenan, M. Huang, S. Wan, J. Song, K. Wang, I. A. Janssens, J. Peñuelas, C. Huntingford, X. Wang, M. A. Arain, Y. Fang, J. B. Fisher, M. Huang, D. N. Huntzinger, A. Ito, A. K. Jain, J. Mao, A. M. Michalak, C. Peng, B. Poulter, C. Schwalm, X. Shi, H. Tian, Y. Wei, N. Zeng, Q. Zhu & T. Wang. "Field-experiment constraints on the enhancement of the terrestrial carbon sink by CO₂ fertilization." *Nature Geoscience* 12:809-814 (2019). [doi:10.1038/s41561-019-0436-1](https://doi.org/10.1038/s41561-019-0436-1)
- [25] Terrenoire, E., D. A. Hauglustaine, **T. Gasser** & O. Penanhoat. "The contribution of carbon dioxide emissions from the aviation sector to future climate change." *Environmental Research Letters* 14: 084019 (2019). [doi:10.1088/1748-9326/ab3086](https://doi.org/10.1088/1748-9326/ab3086)
- [24] Zhang, T., T. Wang, G. Krinner, X. Wang, **T. Gasser**, S. Peng, S. Piao & T. Yao. "The weakening relationship between Eurasian spring snow cover and Indian summer monsoon rainfall." *Science Advances* 5(3): eaau8932 (2019). [doi:10.1126/sciadv.aau8932](https://doi.org/10.1126/sciadv.aau8932)
- [23] Zhang, Y., D. Goll, A. Bastos, Y. Balkanski, O. Boucher, A. Cescatti, M. Collier, **T. Gasser**, J. Ghattas, L. Li, S. Piao, N. Viovy, D. Zhu & P. Ciais. "Increased global land carbon sink due to aerosol-induced cooling." *Global Biogeochemical Cycles* 33 (2019). [doi:10.1029/2018GB006051](https://doi.org/10.1029/2018GB006051)
- [22] **Gasser, T.**, M. Kechiar, P. Ciais, E. J. Burke, T. Kleinen, D. Zhu, Y. Huang, A. Ekici & M. Obersteiner. "Path-dependent reductions in CO₂ emission budgets caused by permafrost carbon release." *Nature Geoscience* 11: 830-835 (2018). [doi:10.1038/s41561-018-0227-0](https://doi.org/10.1038/s41561-018-0227-0)
- [21] Li, X., Y. Balkanski, Z. Wu, **T. Gasser**, P. Ciais, F. Zhou, L. Li, S. Tao, S. Peng, S. Piao, R. Wang, T. Wang & B. Li. "Analysis of slight precipitation in China during the past decades and its relationship with advanced very high radiometric resolution normalized difference vegetation index." *International Journal of Climatology* 38:5563-5575 (2018). [doi:10.1002/joc.5763](https://doi.org/10.1002/joc.5763)
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OTHER PUBLICATIONS

- [v] Smith, S. M., O. Geden, G. Nemet, M. Gidden, W. F. Lamb, C. Powis, R. Bellamy, M. Callaghan, A. Cowie, E. Cox, S. Fuss, T. Gasser, G. Grassi, J. Greene, S. Lück, A. Mohan, F. Müller-Hansen, G. Peters, Y. Pratama, T. Repke, K. Riahi, F. Schenuit, J. Steinhauser, J. Strefler, J. M. Valenzuela & J. C. Minx. *The State of Carbon Dioxide Removal - 1st Edition*. Report (2023).
- [iv] Smith, C., Z. R. J. Nicholls, K. Armour, W. Collins, P. Forster, M. Meinshausen, M. D. Palmer & M. Watanabe. "The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity Supplementary Material." In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu & B. Zhou (eds.)]. Report (2021).
- [iii] Rogelj, J., D. Shindell, K. Jiang, S. Fifita, P. Forster, V. Ginzburg, C. Handa, H. Kheshgi, S. Kobayashi, E. Kriegler, L. Mundaca, R. Sférian & M.V. Vilariño. "Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development." In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty* [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor & T. Waterfield (eds.)]. Report (2018).
- [ii] Boucher, O., B. de Guillebon, L. Abbadie, P. Barré, S. Bekki, B. Bensaude-Vincent, S. Blain, D. Bonnelle, P. Ciais, F. Clin, A. Dahan, M.-L. Dangeard, R. de Richter, M. Dörries, L. Dumergues, B. Fisset, T. Gasser, F. Gemenne, S. Godin-Beekmann, B. Guillaume, M. Ha-Duong, J.-M. Laperrelle, P. Maudis, D. Montout, P. Perret, B. Quéguiner, D. Salas y Melia, F. Trolard, M. van Hemert, E. Vésine & E. Vidalenc. *Réflexion systémique sur les enjeux et méthodes de la géo-ingénierie de l'environnement*. Rapport d'Atelier de Réflexion Prospective (in French), Agence Nationale de la Recherche (2014).
- [i] Gasser, T. *Attribution régionalisée des causes anthropiques du changement climatique*. PhD thesis (in French), Université Pierre et Marie Curie (2014).

INVITATION TO ACADEMIC CONFERENCES

- [1] 2017: **Panellist** for the *EGU General Assembly Great Debate*, Vienna, Austria: "Is 2 degrees possible without relying on carbon storage and capture?"

PARTICIPATION TO ACADEMIC CONFERENCES

- [xiv] 2022: **Oral** presentation at the *Scenarios Forum*, Laxenburg, Austria: "Mitigation pathways robust to Earth system uncertainty under cost-benefit and cost-effective paradigms."
- [xiii] 2022: **Oral** presentation at the *EGU General Assembly*, Vienna, Austria: "Pathfinder: a simple yet accurate carbon-climate model to explore climate change scenarios."

- [xii] 2021: **Interactive** presentation (PICO) at the *EGU General Assembly*, Online: "*A Bayesian-inferred physical module to estimate robust mitigation pathways with cost-benefit IAMs.*"
- [xi] 2019: **Interactive** presentation (PICO) at the *EGU General Assembly*, Vienna, Austria: "*Path-dependent reductions in CO₂ emission budgets caused by permafrost carbon release.*"
- [x] 2018: **Poster** presentation at the *EGU General Assembly*, Vienna, Austria: "*The contribution of China's emissions to global climate forcing.*"
- [ix] 2018: **Poster** presentation at the *EGU General Assembly*, Vienna, Austria: "*Path-dependent reduction in emission budgets caused by permafrost carbon release.*"
- [viii] 2017: **Oral** presentation at the *Arctic Circle Assembly*, Reykjavik, Iceland: "*Permafrost thaw weakens emission budgets.*"
- [vii] 2017: **Poster** presentation at the *10th International Carbon Dioxide Conference (ICDC)*, Interlaken, Switzerland: "*Permafrost thaw strongly reduces allowable CO₂ emissions.*"
- [vi] 2015: **Poster** presentation at the *Our Common Future under Climate Change* conference, Paris, France: "*Negative emissions physically needed to keep global warming below 2°C.*"
- [v] 2015: **Poster** presentation at the *Our Common Future under Climate Change* conference, Paris, France: "*Long-term effect of short-lived species through the climate-carbon feedback.*"
- [iv] 2013: **Oral** presentation at the *EGU General Assembly*, Vienna, Austria: "*A theoretical framework to distinguish direct and indirect anthropogenic perturbations of the terrestrial carbon cycle.*"
- [iii] 2011: **Poster** presentation at the *Planet Under Pressure* conference, London, UK: "*Physically-based attribution methods for geoengineering.*"
- [ii] 2011: **Poster** presentation at the *Planet Under Pressure* conference, London, UK: "*Regionalized attribution of sources and sinks in the carbon cycle.*"
- [i] 2010: **Oral** presentation at the *AGU Fall Meeting*, San Francisco, USA: "*Attributing the increase of atmospheric CO₂ to absorbers and emitters.*"

BIBLIOMETRIC INDICES (as of Feb. 3, 2023)

<i>Google Scholar</i> :	items = 94	citations = 7736	h-index = 28	i10-index = 37
<i>Scopus</i> :	articles = 55	citations = 4285	h-index = 26	coauthors = 476
<i>Web of Science</i> :	articles = 49	citations = 3590	h-index = 25	

MODEL DEVELOPMENT

OSCAR, compact Earth system model, available at <https://github.com/tgasser/OSCAR>

Pathfinder, Bayesian-inferred simple climate model, available at <https://github.com/tgasser/Pathfinder>

SUPERVISION ACTIVITIES

Postdoctoral researchers

2021–now: Biqing Zhu (LSCE/IPSL)

2021–now: Gaurav Shrivastav (IIASA)

2018–2020: Yann Quilcaille (IIASA)

Doctoral students

2020–now: Thomas Bossy (LSCE/IPSL)

2014–2018: Yann Quilcaille (LSCE/IPSL)

Graduate students

2022: Léa Corneille (*École Nationale de la Météorologie*)
2020: Iris Jansselns (*Univ. Gent*)
2019: Côme Chéritel (*École Polytechnique*)
2019: Léa Crepin (*AgroParisTech*)
2017: Mehdi Kechiar (*École Polytechnique*)
2014: Yann Quilcaille (*École Normale Supérieure de Cachan*)
2014: Claire Palandri (*AgroParisTech*)
2012: Maxime Tortora (*École Normale Supérieure de Cachan*)

TEACHING ACTIVITIES

2014–2016: Speaker for the *Sino-French Institute for Earth system science (SoFIE)* summer schools, Peking University, China
2015: Associate lecturer for a graduate course on simple climate modelling, Master “*Economie de l’Environnement, de l’Energie et des Transports*” (EEET), *AgroParisTech*, France
2014–2015: Associate lecturer for a graduate course introducing climate change, *Advanced Technology Higher Education Network/Socrates (ATHENS)* programme, *AgroParisTech*, France
2007: Assistant teacher at *Collège Burtzwiller* (pupils aged 11 to 16), Mulhouse, France

REVIEWING ACTIVITIES

Journal referee for: *Nature*, *Nature Climate Change*, *PNAS*, *Geoscientific Model Development*, *Global Change Biology*, *Atmospheric Chemistry and Physics*, *Environmental Research Letters*, *Earth System Dynamics*, *Earth’s Future*, *Global Biogeochemical Cycles*, *Tellus B*

OUTREACH ACTIVITIES

Interviewee for various media outlets: Radio Ecoshock, Ojo al Clima, The Independent, AFP, Atlantico, France Inter (radio), Carbon Brief, New Scientist, France Culture (radio), Science et Vie
2015: *Train du Climat*, outreach effort towards the general public, France

OTHER SKILLS

Language: French (native), English (fluent), Italian (rusted), German (minimal)

Computer: Python (scientific packages: numpy, scipy, pandas, xarray, pymc3, matplotlib; and others)