Thomas Frölicher
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Date of birth 11 September 1979
Civil status Married, 1 daughter
Nationality Swiss

SHORT PORTRAIT

Thomas Frölicher is currently a SNF Assistant professor at the Climate and Environmental Physics Division of the University of Bern and the head of the ocean modelling group. He is interested in marine ecosystem-carbon-climate interactions with focus on ocean extreme events and their impacts on marine organisms and ecosystem services. He studied environmental sciences at ETH Zürich and graduated at the University of Bern. He worked 2 ½ years as a postdoctoral fellow at Princeton University and 4 years as a senior researcher at ETH Zürich. He is also the recipient of a SNF Ambizione fellowship. He authored or co-authored 46 peer-reviewed publications, is the lead author of chapter six of the upcoming IPCC Special Report on the Ocean and Cryosphere in a changing climate, and contributed to the fifth assessment report of working group II of the IPCC. A portrait about Thomas' work is available on http://www.zeit.de/2016/20/thomas-froelicher-klimaforscher-schweiz .

RESEARCH EXPERIENCE

8/17 –	**SNF Assistant Professor, Climate and Environmental Physics, University of Bern, Switzerland** Focus: Ocean extremes in a warmer world: Discovering risks for marine ecosystems.
5/16 – 7/17	**Senior Researcher, Environmental Physics, ETH Zürich, Switzerland**
5/13 – 4/16	**SNF Ambizione Fellow, Environmental Physics, ETH Zürich, Switzerland** Host: Prof. Nicolas Gruber.
9/12 – 4/13	**Senior Nereus Fellow, AOS Program, Princeton University, USA** Advisor: Prof. Jorge Sarmiento.
9/10 – 8/12	**SNF Postdoc, AOS Program, Princeton University, USA** Advisor: Prof. Jorge Sarmiento.
5/09 – 8/10	**Postdoc, Climate and Environmental Physics, University of Bern, Switzerland** Advisor: Prof. Fortunat Joos.
5/05 – 4/09	**PhD candidate, Climate and Environmental Physics, University of Bern, Switzerland** Advisor: Prof. Fortunat Joos.
2/05 – 8/05	**Research scientist, Meteoswiss, Switzerland, 20%**
5/03 – 10/04	**Research scientist, Meteoswiss, Switzerland, 20%**
11/02 – 3/03	**Internship, Meteoswiss, Switzerland**

EDUCATION

04/09	**PhD**, **Climate and Environmental Physics, University of Bern, Switzerland** Thesis: Ensemble modeling of the coupled carbon cycle-climate system Passed with summa cum laude. Advisor: Prof. Fortunat Joos. Referees: Prof. Thomas Stocker, Prof. Christoph Heinze
11/04	**Diploma**, **Environmental Sciences, ETH Zürich, Switzerland** Major: Atmosphere and Physics. Advisors: Dr. Cornelia Schwierz, Prof. Huw Davies

EDUCATION

04/09	**PhD**, **Climate and Environmental Physics, University of Bern, Switzerland** Thesis: Ensemble modeling of the coupled carbon cycle-climate system Passed with summa cum laude.

Advisor: Prof. Fortunat Joos. Referees: Prof. Thomas Stocker, Prof. Christoph Heinze

11/04 **Diploma**, **Environmental Sciences, ETH Zürich, Switzerland**
Major: Atmosphere and Physics.
Advisors: Dr. Cornelia Schwierz, Prof. Huw Davies

SUPERVISION AND MENTORING EXPERIENCE

Graduate students

12/17 - **Advisor for PhD thesis, University of Bern,** Sandra Striegel, PhD student
Assessing the risks of marine heatwaves for marine ecosystems

12/17 - **Advisor for PhD thesis, University of Bern,** Friedrich Burger, PhD student
Modeling biogeochemical extreme events

Postdocs and research staff

12/17 - **Advisor for Postdoc, University of Bern,** Charlotte Laufkötter, Postdoc
Attribution of recent marine heatwaves to anthropogenic climate change

11/17 – 04/18 **Advisor for research associate scientist, University of Bern**, Emma Velterop
Unlocking ocean acidification extreme events from space?

03/15 – 08/15 **Advisor for research associate scientist, ETH Zürich**, Lukas von Känel
Preparing a paper about the role of the ocean in the recent global warming hiatus

Master students, bachelor students, interns

7/18 - **Advisor for master thesis, University of Bern,** Luca Ramseyer, Master Student
Assessing the potential predictability of marine ecosystem stressors

03/16 – **Advisor for bachelor thesis, ETH Zürich,** Noé Lahiguera Vizoso, Bachelor Student
Transient Earth System response to cumulative carbon emissions

10/17 – 3/18 **Advisor for master thesis, University of Bern,** Mathias Aschwanden, Master Student
Long-term evolution of the meridional overturning circulation in a warming climate

02/16 – 06/16 **Advisor for master thesis, ETH Zürich,** David Kessler, Master Student
Global and regional changes in extreme behavior of sea surface temperature from 1981-2014

09/15 – 02/16 **Advisor for semester thesis, ETH Zürich,** David Kessler, Master Student
Simulated changes of extreme events in potential ocean ecosystem stressors

09/14 – 02/15 **Advisor for master thesis, ETH Zürich**, Lukas von Känel, Master Student
Assessing the role of the ocean in the recent global warming hiatus

05/14 – 09/14 **Advisor for bachelor thesis, ETH Zürich**, Ronny Meyer, Bachelor Student
Assessing the ocean heat-oxygen relationship

05/14 – 08/14 **Advisor for summer intern, Princeton University**, Jonathan Lin, Undergraduate student
Investigated emergence of multiple ocean ecosystem stressors in a large ensemble suite with an Earth System Model

06/12 – 12/12 **Advisor for summer intern, Princeton University**, Alex Do, Undergraduate student
Investigated past and future ocean acidification in the Southern Ocean

06/11 – 09/11 **Advisor for summer intern**, **Princeton University**, Jonathan Moch, Undergraduate student

Quantified carbon cycle-climate feedbacks with a coupled carbon cycle-climate model

Examining committees

05/18 **Examining committee PhD thesis, ETH Zürich,** Ana Franco
Ocean acidification in the Humboldt Current System

12/17 **Chair Master thesis defense, University of Bern,** Levyn Bürki
Physically-based reconstructions of past variability of the North Atlantic Ocean circulation in depth and density space coordinates

05/17 **Examining committee PhD thesis, ETH Zürich,** Dominic Clement
Quantifying decadal changes in ocean anthropogenic carbon storage

01/17 **Examining committee PhD thesis, ETH Zürich,** Maria Rugenstein
Limits of the linear forcing-feedback framework

TEACHING EXPERIENCE

Since 2017 **Teacher, Introduction to Climate and Environmental Physics, University of Bern**
Since 2017 **Teacher, Carbon cycle University of Bern**
Since 2014 **Teacher, Introduction to Physical Oceanography, ETH Zürich**
10/18 **Teacher, Oceans and marine resources, ETH Zürich**
10/16 **Teacher, Oceans and marine resources, ETH Zürich**
09/15 – 11/15 **Tutor, Seminar Course in Biogeochemistry, ETH Zürich**
11/14 **Teacher, System Analysis, ETH Zürich**
04/14 **Teacher, Global Biogeochemical Cycles and Climate, ETH Zürich**

AWARDS AND FUNDED RESEARCH

02/17 **Assistant Professorship, Swiss National Science Foundation** (CHF 1'587'895)
05/16 **Named as one of the most promising young scientists by *Die Zeit*.**
04/16 **Nereus Program Expansion Fund** ($135'000)
07/15 **ReCoVER Feasibility Fund, UK** (£5'876)
04/14 **Best Paper Award, Carbon Mitigation Initiative, Princeton University** ($5'000)
08/12 **Ambizione Fellowship, Swiss National Science Foundation** (CHF 384'034)
07/12 **Travel grant, Scientific Committee on Antarctic Research** ($1'000)
03/12 **Travel grant, World Climate Research Programme** ($800)
03/11 **Nomination by Princeton University for AXA Postdoctoral Fellowship**
02/10 **Postdoc fellowship, Swiss National Science Foundation** (CHF 62'300)
01/10 **Best Paper Award, CARBOOCEAN** ($1'000)

TALKS (ONLY KEYNOTE OR INVITED)

11/18 Berufsbildungszentrum Olten, Olten, Switzerland
11/18 Swiss Society for Meteorology, University of Bern, UK
11/18 OneNOAA Science Seminars, Webinar
06/18 School of Environmental Sciences, University of Liverpool, UK
05/18 Institute of Geography, University of Bern, Switzerland
11/17 CEP Seminar, University of Bern, Bern, Switzerland
09/17 OCCR Plenary Meeting, Bern, Switzerland
06/17 OCB summer workshop, Woods Hole, USA
06/17 USYS departmental retreat, Davos, Switzerland
06/17 IBP Seminar, ETH Zürich, Switzerland (together with N. Gruber)
05/17 Seminar Climate physics group, ETH Zürich, Switzerland
03/17 Obwaldner Bürgergemeinden, Giswil, Switzerland
01/17 Swiss National Science Foundation, Bern, Switzerland
11/16 Kick-off Meeting WCRP Grand Challenge 'Carbon feedback in the climate system', Hamburg, Germany

11/16 Postdoc/PhD Retreat SFB754, GEOMAR Kiel, Germany
11/16 Seminar, University of Basel, Switzerland
09/16 Oxygen Workshop, Royal Society UK, London, UK
06/16 Seminar, University of Exeter, Exeter, UK
06/16 Joint Seminar, MPI and University of Hamburg, Germany
05/16 Congress of the Canadian Meteorological and Oceanographic Society, Fredericton, Canada
03/16 Business Breakfast, Solothurn, Switzerland
03/16 Symposium in honor of Prof. Jorge Sarmiento, Princeton University, USA
01/16 Swiss National Science Foundation, Bern, Switzerland
12/15 AGU Fall Meeting, San Francisco, USA
04/15 Keynote Tambora Bicentenary Conference, Bern, Switzerland
11/14 Seminar National Oceanography Centre Southampton, UK
03/14 Seminar Climate physics group, ETH Zürich, Switzerland
02/14 Seminar Institute for Atmospheric and Climate Science ETH Zürich, Switzerland
10/13 Seminar Climate and Environmental Physics, University of Bern, Switzerland
10/13 Seminar Geophysical Fluid Dynamics Laboratory (GFDL), Princeton, USA
02/13 Nereus Annual Meeting, Princeton University, USA
10/12 US National Science Foundation, Princeton University, USA
05/12 Swiss National Science Foundation, Switzerland
04/12 Seminar Lamont-Doherty Earth Observatory, Columbia University, New York, USA
01/12 Seminar Environmental Geology and Geochemistry, Princeton University, USA
01/12 Seminar NASA Goddard Institute for Space Studies, New York, USA
11/11 Seminar University of East Anglia, UK
02/10 Seminar Geophysical Fluid Dynamics Laboratory, Princeton, USA
10/09 Seminar ZMAW/KlimaCampus, MPI Hamburg, Germany
07/09 Symposium Decadal Variations of the Ocean's Interior Carbon Cycle, Switzerland
10/08 Seminar Climate and Environmental Physics, University of Bern, Switzerland
09/08 Seminar Environmental Physics ETH Zürich, Switzerland

INTERNAL SEMINAR, CONFERENCE AND WORKSHOP PRESENTATIONS (AS FIRST AUTHOR ONLY)

09/18 Ocean deoxygenation conference, Kiel, Germany (Talk)
06/18 Nereus annual meeting, University of Washington, USA (Talk)
06/18 Symposium on the effects of climate change on the World's oceans, Washington, USA (Talk)
04/18 Carbon cycle climate feedback workshop, University of Bern, Switzerland (Talk)
04/18 Swiss Global Change Day, Bern, Switzerland (Poster)
08/17 ICDC10, Interlaken, Switzerland (Talk)
02/16 Ocean Sciences Meeting, New Orleans, USA (Talk)
12/15 AGU Fall Meeting, San Francisco, USA (2 Talks)
10/15 EMBRACE-CMIP Workshop, Dubrovnik, Croatia (Talk, Poster)
06/15 Our Common Future, UNESCO Paris, France (Poster)
12/14 Ocean's carbon and heat uptake workshop, San Francisco, USA (Poster)
12/14 AGU Fall Meeting, San Francisco, USA (Talk and 2 Posters)
10/14 Seminar Environmental Physics, ETH Zürich, Switzerland (Talk)
06/14 Latsis Symposium, ETH Zürich, USA (Talk)
04/14 Low Oxygen Conference, Liège, Belgium (Talk)
04/14 EGU, Vienna, Austria (2 Posters)
12/13 AGU Fall Meeting, San Francisco, USA (Talk and Poster)
09/13 Seminar Environmental Physics, ETH Zürich, Switzerland (Talk)
04/13 Carbon Mitigation Initiative Annual Meeting, Princeton University, USA (Poster)
12/12 Seminar AOS Program, Princeton University, USA (Talk)
10/12 SOBOM Student/Postdoc Symposium, Princeton, USA (Talk)
10/12 SOBOM NSF Site visit, Princeton, USA (Poster)
07/12 SCAR Open Science Conference, Portland, USA (Poster)
05/12 Seminar AOS Program, Princeton University, USA (Talk)
04/12 Carbon Mitigation Initiative Annual Meeting, Princeton University, USA (Poster)
03/12 CMIP5 Analysis Workshop, Honolulu, USA (Talk, Poster)
02/12 Ocean Sciences Meeting, Salt Lake City, USA (Talk)
11/11 EUR-OCEANS Conference, Toulouse, France (Poster)
05/11 Seminar AOS Program, Princeton University, USA (Talk)
12/10 AGU Fall Meeting, San Francisco, USA (Poster)

10/10	Seminar AOS Program, Princeton University, USA (Talk)
05/10	EGU, Wien, Austria (Poster)
06/09	Goldschmidt Conference, Davos, Switzerland (Talk)
11/08	Annual Meeting of EUR-OCEANS, Bern, Switzerland (Talk)
04/08	Swiss Global Change Day, Bern, Switzerland (Poster)
03/08	Ocean Sciences Meeting, ASLO, Orlando, USA (Talk)
12/07	CARBOOCEAN Meeting, Bremen, Germany (Poster)
10/07	Berner Umweltforschungstag, Bern, Switzerland (Poster)
08/07	2nd International Conference on Earth System Modeling Hamburg, Germany (Poster)
12/06	CARBBOCEAN Meeting, Gran Canaria, Spain (Talk)
12/06	User Day of Swiss National Supercomputing Centre CSCS, Switzerland (Poster)
04/06	Annual Meeting of EUR-OCEANS, Bern, Switzerland (Talk)
04/06	Swiss Global Change Day, Bern, Switzerland (Poster)
04/06	EGU, Vienna, Austria (Poster)
11/05	CARBBOCEAN meeting, Amsterdam, Netherlands (Poster)
09/05	User Day of Swiss National Supercomputing Centre Manno, Switzerland (Poster)

ACADEMIC ACTIVITIES AND SERVICES

IPCC	Lead author of chapter 6 of the IPCC Special Report on the Ocean and Cryosphere in a changing climate Contributing author in chapter 9 of the IPCC WGI AR6 Contributing author in chapter 6 of the IPCC WGII AR5
Workshop organizer	"Extending the climate-carbon cycle feedback framework". WCRP Grand Challenge on Carbon feedbacks in the climate system. 2018, University of Bern, Switzerland
Session convener	"The role of the ocean in a warming climate" EGU 2019, Wien. "Ensemble modeling approaches in physical and biogeochemical Oceanography". Ocean Sciences Meeting 2018, Portland. "The role of the ocean in climate: Heat and carbon uptake, storage, and transport." Ocean Sciences Meeting 2016, New Orleans.
Review panelist	NOAA, Washington, January 2015.
Review activities	Biogeosciences, Climate Dynamics, Deep Sea Research Part I, Earth's FEnvironmental Research Letters, Environmental Science & Technology, Geophysical Research Letters, Geoscientific Model Development, Global Biogeochemical Cycles, Global Change Biology, Journal of Climate, Marine Biology, Nature, Nature Climate Change, Nature Communications, Nature Geoscience, Ocean Circulation and Climate (Book), Progress in Oceanography, Science, The Holocene, US NOAA, US NSF, UK NERC

PUBLICATIONS WITH PEER-REVIEW

Web of Science: h-index: 21, citations: 2170 (October 23, 2018)
Google Scholar: h-index: 29, citations: 3484 (October 23, 2018)

46. **T. L. Frölicher**, E. M. Fischer, N. Gruber, 2018, Marine heatwaves under global warming. *Nature*, 560, 360-364.
45. Cheung, W. W. W., M. Jones, G. Reygondeau, **T. L. Frölicher**, 2018, Opportunities for climate-risk reduction through effective fisheries management. *Global Change Biology*, 24, 5149-5163.
44. **T. L. Frölicher**, C. Laufkötter, 2018, Emerging risks from marine heat waves, Nature Communications, 9, 650.
43. Palter, J., **T. L. Frölicher**, D. Paynter, J. John, 2018, Climate, ocean circulation, and sea level changes under stabilization and overshoot pathways to 1.5K warming. *Earth System Dynamics*, 9, 817,828.
42. Morley, J.W.R., R. Selden, R. Latour, **T. L. Frölicher**, R. Seagraves, M. Pinsky, Projecting shifts in thermal habitat for 658 species on the North American continental shelf. *PLOS ONE*, 13(5) e0196127.

41. Franco, A., N. Gruber, **T. L. Frölicher**, L. Kroupenske Artman, 2018, Contrasting impact of future CO_2 emission scenarios on the extent of CaCO3 mineral undersaturation in the Humboldt Current System. *J. Geophys. Res. Ocean*, 123, 2018-2036.
40. Paynter, D., **T. L. Frölicher**, L. Horrowitz, L. G. Silvers, 2018, Equilibrium climate sensitivity obtained from multi-millennial runs of two GFDL climate models. *J. Geophys. Res. Atmos*. 123, 1921-1941.
39. Willimas, R. G., V. Roussenouv, **T. L. Frölicher**, P. Goodwin, 2017, Drivers of continued surface warming after cessation of carbon emissions. *Geophysical Research Letters,* 44*,* 10633-10642.
38. von Känel, L., **T. L. Frölicher**, N. Gruber, 2017, Hiatus-like decades in the absence of equatorial Pacific cooling and accelerated global ocean heat uptake. *Geophysical Research Letters,* 44*,* 7909-7918.
37. Cheung, W. W. L. G. Reygondeau, **T. L. Frölicher**, 2016, Large benefits to global and regional marine fisheries of meeting the 1.5°C global warming target. *Science*, 354, 1591-1594.
36. **Frölicher, T. L.,** K. B. Rodgers, C. Stock, W. W. L. Cheung, 2016, Sources of uncertainties in 21st century projections of potential ocean ecosystem *stressors. Global Biogeochemical Cycles*, 30, 1224-1243.
35. **Frölicher, T. L.,** 2016, Strong warming at high emissions. *Nature Climate Change*. 6, 823-824.
34. Carter, B. R., **T. L. Frölicher**, J. P. Dunne, K. B. Rodgers, R. D. Slater, J. L. Sarmiento, 2016, Detecting biogeochemical ocean acidification impacts from decadal alkalinity measurements. *Global Biogeochemical Cycles*. 30, 595-612.
33. Raible, C. C., S. Brönnimann, R. Auchmann, P. Brohan, **T. L. Frölicher**, H.-F. Graf, P. Jones, J. Luterbacher, S. Muthers, R. Neukom, A. Robock, S. Self, A. Sudrajat, C. Timmreck, M. Wegman, 2016, Tambora 1815 as a test case for high impact volcanic eruptions: Earth System effect. *WIREs: Climate Chang*e. In press.
32. Lehner, F., A. P. Schurer, G. C. Hegerl, C. Deser, **T. L. Frölicher**, 2016, The importance of ENSO phase during volcanic eruptions for detection and attribution. *Geophysical Research Letters*. 43, 2851-2858.
31. Cheung, W. W. L., M. C. Jones, G. Reygondeau, C. A. Stock, V. W. Y. Lam, **T. L. Frölicher**, 2016, Structural uncertainty in projecting global fisheries catches under climate change. *Ecological Modelling*. 325, 57-66.
30. Cheung, W. W., L., **Frölicher, T. L.**, R. G. Asch, M. Jones, M. L. Pinsky, K. B. Rodgers, R. R. Rykaczewski, J. L. Sarmiento, C. Stock, J. R. Watson, 2016, Building confidence in projections of the responses of living marine resources to climate change. *Journal of Marine Science*. In press.
29. **Frölicher, T. L.**, D. J. Paynter, 2015, Extending the relationship between global warming and cumulative carbon emissions to multi-millennial timescales. *Environmental Research Letters*, 10, 075002.
28. **Frölicher, T. L.**, J. L. Sarmiento, D. P. Paynter, J. P. Dunne, J. P. Krasting, M. Winton, 2015, Dominance of the Southern Ocean in anthropogenic carbon and heat uptake in CMIP5 models. *Journal of Climate*, 28, 862-886 (chosen for Nature Climate Change Research Highlights).
27. Paynter, D. J., **T. L. Frölicher**, 2015, Sensitivity of radiative forcing, ocean heat uptake and climate feedbacks to changes in anthropogenic greenhouse gases and aerosols. *Journal of Geophysical Research,* 120, 9837-9854.
26. Morrison, A. K., **T. L. Frölicher**, J. L. Sarmiento, 2015, Thermal forces in the Southern Ocean upwelling. *Physics Today*, 68(8), 11.
25. Morrison, A. K., **T. L. Frölicher**, 2015, J. L. Sarmiento, Southern Ocean upwelling. *Physics Today*, 68(1), 27-32.
24. Christensen, V., M. Coll, J. Buszowski, W. W. L. Cheung, **T. L. Frölicher,** J. Steenbeck, C. A. Stock, R. A. Watson, C. J. Walter, 2015, The global ocean is an ecosystem: Simulating marine life and fisheries. *Global Ecology and Biogeography*, 4, 507-517.
23. Rodgers, K. B., J. Lin, **T. L. Frölicher**, 2015, Emergence of multiple ocean ecosystem drivers in a large ensemble suite with an Earth System Model. *Biogeosciences*, 12, 3301-3320 (featured as one of the highlighted article from all EGU's open access journals).
22. **Frölicher, T. L.**, M. Winton, J. L. Sarmiento, 2014, Continued global warming after CO_2 emissions stoppage, *Nature Climate Change*, 4, 40-44.
21. Raupach, M. R., M. Gloor, J. L. Sarmiento, J. G. Canadell, **T. L. Frölicher**, T. Gasser, R. A. Houghton, C. Le Quéré, C. M. Trudinger, 2014, The declining uptake rate of atmospheric CO_2 by land and ocean sinks. *Biogeosciences,* 11, 3453-3475.
20. Majkut, J. D., B. R. Carter, **T. L. Frölicher**, C. O. Dufour, K. B. Rodgers, J. L. Sarmiento, 2014, An observing system simulation for Southern Ocean carbon dioxide uptake, *Philosophical Transactions of the Royal Society A*, 372, 20130046.
19. Jaccard, S. L., E. D. Galbraith, **T. L. Frölicher**, N. Gruber. 2014, Ocean (de)oxygenation across the last deglaciation – insights for the future. *Oceanography*, 27(1), 26-35.
18. **Frölicher, T. L.**, F. Joos, C. C. Raible, J. L. Sarmiento, 2013, Atmospheric CO_2 response to volcanic eruptions: the role of ENSO, season, and variability. *Global Biogeochemical Cycles*, 27, 239-251.
17. Cheung, W. W. L., J. L. Sarmiento, J. Dunne, **T. L. Frölicher**, V. Lam, M. L. Deng Palomares, R. Watson, D. Pauly, 2013, Shrinking of fishes exacerbates impacts of global ocean changes on marine ecosystems. *Nature Climate Change*. 3, 254-258.

16. Cocco, V., F. Joos, M. Steinacher, **T. L. Frölicher**, L. Bopp, J. Dunne, M. Gehlen, C. Heinze, J. Orr, A. Oschlies, B. Schneider, J. Segschneider, J. Tjiputra. 2013, Oxygen and indicators of stress for marine life in multi-model global warming projections. *Biogeosciences*, 10, 1849-1868.
15. Fernandez, J., W. W. Cheung, S. Jennings, M. Butenschön, L. de Mora, **T. L. Frölicher**, M. Barange, A. Grant, 2013, Integrating trophic interactions into projecting distribution changes in marine fishes. *Global Change Biology*, 19, 2596-2607.
14. Jones, M. C., S. R. Dye, J. A. Fernandes, **T. L. Frölicher**, J. K. Pinnegar, R. Warren, W. W. L. Cheung, 2013, Predicting the impact of climate change on threatened species in the North Sea. *PLoS ONE*, 8(1).
13. Joos, F., R. Roth, J. S. Fuglestvedt, G. P. Peters, I. G. Enting, W. von Bloh, V. Brovkin, E. J. Burke, M. Eby, N. R. Edwards, T. Friedrich, **T. L. Frölicher**, P. R. Halloran, P. B. Holden, C. Jones, T. Kleinen, F. Mackenzie, K. Matsumoto, M. Meinshausen, G.-K. Plattner, A. Reisinger, J. Segschneider, G. Shaffer, M. Steinacher, K. Strassmann, K. Tanaka, A. Timmermann, A. J. Weaver, 2013, Carbon dioxide and climate impulse response functions for the computation of greenhouse gas metrics: A multi-model analysis. *Atmospheric Chemistry and Physics*, 13, 2793-2825.
12. Winton, M, S. M. Griffies, B. Samuels, J. L. Sarmiento, **T. L. Frölicher**, 2013, Connecting changing ocean circulation with changing climate. *Journal of Climate*, 26, 2268-2278 (chosen for Nature Climate Change Research Highlights).
11. Gruber N., C. Hauri, Z. Lachkar, D. Loher, **T. L. Frölicher**, G.-K. Plattner, 2012, Rapid progression of ocean acidification in the California Current System, *Science,* 337(6091), 220-223.
10. Keller, K., F. Joos, C. C. Raible, V. Cocco, **T. L. Frölicher**, J. P. Dunne, M. Gehlen, T. Roy, L. Bopp, J. C. Orr, J. Tjiputra, C. Heinze, J. Segschneider, N. Metzl, 2012, Variability of the Ocean Carbon Cycle in Response to the North Atlantic Oscillation. *Tellus B*, 64, 18738.
9. **Frölicher, T. L**., F. Joos, C. C. Raible, 2011, Sensitivity of atmospheric CO_2 and climate to explosive volcanic eruptions. *Biogeosciences,* 8, 2317-2339.
8. Joos, F., **T. L. Frölicher**, M. Steinacher, G.-K. Plattner, 2011, Impact of climate change mitigation on ocean acidification projections. In: Gattuso J.P, Hansson L., editors. Ocean Acidification. Cambridge Univ. Press. 272-290.
7. Roy, T., L. Bopp, M. Gehlen, B. Schneider, P. Cadule, **T. L. Frölicher**, J. Segschneider, J. Tjiputra, C. Heinze, F. Joos, 2011, Regional impacts of climate change and atmospheric CO_2 on future ocean carbon uptake: A multi-model linear feedback analysis. *Journal of Climate*, 24, 2300-2318.
6. **Frölicher, T. L**., F. Joos, 2010, Reversible and irreversible impacts of greenhouse gas emissions in multi-century projections with the NCAR global coupled carbon cycle-climate model. *Climate Dynamics,* 35, 1439-1459.
5. Steinacher, M., F. Joos, **T. L. Frölicher**, L. Bopp, P. Cadule, S. C. Doney, M. Gehlen, B. Schneider, J. Segschneider, 2010, Projected 21st century decrease in marine productivity: a multi-model analysis. *Biogeosciences*, 7, 979-1005 (chosen for Nature Research Highlights).
4. **Frölicher, T. L**., F. Joos, G.-K. Plattner, M. Steinacher, S. C. Doney, 2009, Natural variability and anthropogenic trends in oceanic oxygen in a coupled carbon cycle-climate model ensemble. *Global Biogeochemical Cycles,* 23, GB1003.
3. Gattuso, J.-P., L. Hansson, J. Bijma, H. Elderfield, P. Burkill, T. Tyrrell, M. Edwards, S. Widdicombe, U. Riebesell, M. Steinacher, F. Joos, **T. L. Frölicher**, C. Turley, K. Boot, K.-M. Davidson, D. Laffoley, P. Saugier, 2009, European Project on Ocean Acidification (EPOCA): objectives, products and scientific highlights. *Oceanography,* 22/4, 190-201.
2. Steinacher, M., F. Joos, **T. L. Frölicher**, G.-K. Plattner, S. C. Doney, 2009, Imminent ocean acidification projected with the NCAR global coupled carbon cycle-climate model. *Biogeosciences,* 6, 515-533.
1. Schneider, B., L. Bopp, M. Gehlen, J. Segschneider, **T. L. Frölicher**, P. Cadule, P. Friedlingstein, S. C. Doney, M. J. Behrenfeld, F. Joos, 2009, Climate-induced interannual variability of marine primary and export production in three global coupled climate carbon cycle models. *Biogeosciences,* 5, 597-614.