THE UNIVERSITY OF ARIZONA

Dr. Marcus Lofverstrom
Department of Geosciences
1040 E. 4th Street
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lofverstrom@arizona.edu
http://lofverstrom.github.io

Chronology of Education

2009 – 2014	**Doctor of Philosophy in Atmospheric Sciences and Oceanography**, (Awarded 11/2014). Stockholm University *(Stockholm, Sweden) Advisors*: Rodrigo Caballero & Johan Nilsson; *Dissertation:* On the interactions between ice sheets and the large-scale atmospheric circulation over the last glacial cycle
2005 – 2009	**Master of Science in Meteorology** (Awarded 06/2009). Stockholm University *(Stockholm, Sweden) Advisor:* Jonas Nycander; *Thesis:* Barotropic instability of eastward flow

Chronology of Employment

2021 – present	**Joint Assistant Professor**, Department of Hydrology and Atmospheric Sciences, University of Arizona (*Tucson, AZ, USA*)
2018 – present	**Assistant Professor**, Department of Geosciences, University of Arizona (*Tucson, AZ, USA*)
2017 – 2018	**Adjunct Assistant Professor**, Department of Earth & Environment, Boston University (*Boston, MA, USA*)
2015 – 2018	**Postdoctoral Fellow**, National Center for Atmospheric Research *(Boulder, CO, USA)*
2015 – 2015	**Postdoctoral Fellow**, Stockholm University *(Stockholm, Sweden)*

Honors and Awards

2022	Bjerknes Visiting Fellow (University of Bergen), May-June 2022
2021	Outstanding Faculty Award, Geosciences Advisory Board (U. Arizona)
2021*	Bjerknes Visiting Fellow (University of Bergen – postponed due to COVID-19)
2019	International Meteorological Institute, visiting researcher (Stockholm University)
2016	International Meteorological Institute, visiting researcher (Stockholm University)
2014	Bolin Center for Climate Research travel grant (Stockholm University)
2012	Wallenberg donation stipend
2011	Bolin Center for Climate Research travel grant (Stockholm University)
2010	Helge Ax:son Johnson donation stipend

Service / Outreach

Departmental Committees / Advising

Doctoral or Masters Exam Committees (* Primary advisor, † Co-advisor, ‡ Committee member):

Hope Simonoko*, MS, University of Arizona	2022-present
Holly Thomas*, MS, University of Arizona	2021-present
Asiya Badarunnisa Sainudeen*, PhD, University of Arizona	2021-present
Mudith Weerabaddana‡, PhD, University of Arizona	2021-present
Maya Prabhakar‡, PhD, University of Arizona	2022-present
Alice Chapman‡, PhD, University of Arizona	2021-present

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Allison Berry*, MS, University of Arizona	2020-2022
Dr. Dervla Meegan Kumar‡, PhD, University of Arizona	2019-2022
Dr. Jonathan King‡, PhD, University of Arizona	2019-2022
Dr. Emma Reed‡, PhD, University of Arizona	2021

Bachelor Students (* Primary advisor, † Co-advisor, ‡ Committee member):

Michelle Uddin*, BS student, University of Arizona	2023-present
Kay Ateka Poonawala*, BS student, University of Arizona	2022-present
Gigi Giralte*, BS student, University of Arizona	2022-present
Brenna Freeman*, BS student, University of Arizona	2021-2022
Tyrel Malmgren*, BS student, University of Arizona	2021-2022

Other mentoring (*Primary advisor, † Co-advisor)

Faulty mentor Epsilon Eta*, University of Arizona	2022-present
Dr. Malin Odalen*, Postdoctoral Fellow, University of Arizona	2020
Liling Chang*, PhD student, University of Arizona (*Women in STEM* mentoring program)	2020-2021
Dr. Aleah Sommers, Postdoctoral Fellow, National Center for Atmospheric Research (modeling and data analysis support)	2019-2021

Undergraduate Advisory / Policy / Gen Ed Committee	2021-present
Graduate Admissions Committee	2021/23
Annual Performance Evaluation Committee	2020-2022
Arizona Computational Geosciences Center	2018-2020
Geodaze judge, outstanding climate presentation	2019/20/22
Geodaze judge, climate posters	2021
IT Search Committee	2018/22

University Committees

Research Computing Governance Committee, High-Performance Computing (RCGC HPC) Refresh Committee	2019

Other Committees

Women in STEM mentoring program	2020-2021
Core member of *Land Ice Working Group* (LIWG) at the *National Center for Atmospheric Research* (NCAR)	2015-present

Referee

Journal of Climate; Climate Dynamics; Geophysical Research Letters; Climate of the Past; Earth and Planetary Science Letters; Quaternary Science Reviews; Scientific Reports; Nature Geoscience; Nature Communications; Nature Earth and Environment; Geology; The Cryosphere; Cambridge University Press; European Research Council

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Teaching

2023 GEOS 285: Introduction to Python in geosciences (spring)
2022 GEOS 596H-003: Python Seminar (fall)
GEOS 342: The History of Earth's Climate (fall)
GEOS 285: Introduction to Python in geosciences (spring)
2021 GEOS 437/537: Introduction to Earth-system modeling (fall)
GEOS 342: The History of Earth's Climate (fall)
GEOS 280: Programming and Data Analysis in the Earth Sciences (spring)
2020 GEOS 596H-001: Numerical Modeling Workshop (fall)
GEOS 596H-002: Climate Model—Paleoclimate "Proxy" Synthesis: the good, the bad, and the ugly (fall)
GEOS 596E-001: Department of Geosciences Extended Colloquium Discussion (fall)
GEOS 170A1: Earth from birth the death (spring)
2019 GEOS 437/537: Introduction to Earth-system modeling (fall)
GEOS 596H-003: Atmosphere and ocean circulation through time (spring)
2018 Computing Fridays (fall)

Guest lecturer:

- GEOS 502: Analytical and Numerical Modeling in Geosciences, U. Arizona, 2019 (1 class)
- ATOC-5050: Introduction to Atmospheric Dynamics, CU Boulder, 2017 (4 classes)

Summer schools and workshops:

- Community Earth System Model (CESM) tutorial, NCAR, Boulder, CO, 2015-2018
- Modeling and project work support at the International Arctic Research Center (IARC) summer school, Fairbanks, AK, 2011

Attended teaching and science communication courses:

- Effectively Communicating Science Annual Workshop, NSF Expert Witness Training Academy, Mitchell Hamline School of Law, St. Paul, MN, 2017
- University Pedagogy 1, Stockholm University, Stockholm, Sweden, 2012

Publications / Creative Activity

Peer-reviewed Manuscripts § Post-doctoral researcher advisee, † Graduate student advisee, ‡ Undergraduate Student Advisee, * Substantially based on work done as a graduate student

2022 Herrington, A. R., P. H. Lauritzen, **M. Lofverstrom**, W. H. Lipscomb, A. Gettelman, and M. A. Taylor: Impact of grids and dynamical cores in CESM2.2 on the surface mass balance of the Greenland Ice Sheet, J. Adv. Model. Earth Syst., 14, e2022MS003192, https://doi.org/10.1029/2022MS003192

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Lofverstrom, M., D. Thompson, B. Otto-Bliesner, and E. Brady: The importance of Canadian Arctic Archipelago gateways for glacial expansion in Scandinavia. *Nat. Geosci*. **15,** 482–488 (2022). https://doi.org/10.1038/s41561-022-00956-9

Bush, M.B., S. Conrad, A. Restrepo, D. M Thompson, **M. Lofverstrom**, and J. L. Conroy: Human-induced ecological cascades: extinction, restoration, and rewilding in the Galápagos highlands, PNAS, 119, e2203752119, doi:10.1073/pnas.2203752119

Thompson, D. M., M. McCulloch, J. E. Cole, E. V. Reed, J. D'Olivo, K. Dyez, **M. Lofverstrom,** J. Lough, N. Cantin, A. W. Tudhope, A. H. Cheung, L. Vetter, and R. L. Edwards: Marginal reefs under stress: physiological limits render Galápagos corals susceptible to warming and acidification, *AGU Advances*, 3, e2021AV000509, doi: 10.1029/2021AV000509

2021

Sommers, A., B. Otto-Bliesner, W.H. Lipscomb, **M. Lofverstrom**, S. Shafer, P. Bartlein, E. Brady, E. Kluzek, G. Leguy, K. Thayer-Calder, and R. Tomas: Retreat and regrowth of the Greenland Ice Sheet during the Last Interglacial as simulated by the CESM2-CISM2 coupled climate–ice sheet model. *Paleoceanography and Paleoclimatology*, 36, e2021PA004272, doi: 10.1029/2021PA004272

Tabor, C., **M. Lofverstrom**, J. Oster, B. Wortham, C. de Wet, I. Montanez, A. Rhoades, C. Zarzycki, C. He, and Z. Liu: A Mechanistic Understanding of Oxygen Isotopic Changes in the Western United States at the Last Glacial Maximum, *Quaternary Science Review* (invited), 274, 107255, doi: 10.1016/j.quascirev.2021.107255

Menemenlis, S., J. Lora, **M. Lofverstrom**, and D. Chandan: Influence of Stationary Waves on mid-Pliocene Atmospheric Rivers and Hydroclimate, *Global and Planetary Change*, 204, 103557, doi: 10.1016/j.gloplacha.2021.103557

Muntjewerf, L., W. J. Sacks, **M. Lofverstrom**, J. Fyke, W. H. Lipscomb, C. Ernani da Silva, C., M. Vizcaino K. Thayer-Calder, J. T. M. Lenaerts, and R. Sellevold (2021). Description and demonstration of the coupled Community Earth System Model v2 – Community Ice Sheet Model v2 (CESM2-CISM2), *J. Adv. Model. Earth Syst*., 13, e2020MS002356, doi: 10.1029/2020MS002356

Kageyama, M., S. P. Harrison, M. Kapsch, **M. Lofverstrom**, J. M. Lora, U. Mikolajewicz, S. Sherriff-Tadano, T. Vadsaria, A. Abe-Ouchi, N. Bouttes, D. Chandan, L. Gregoire, R. Ivanovic, K. Izumi, A. N. LeGrande, F. Lhardy, G. Lohmann, P. A. Morozova, R. Ohgaito, A. Paul, W. R. Peltier, C. J. Poulsen, A. Quiquet, D. M. Roche, X. Shi, J. E. Tierney, P. J. Valdes, E. Volodin, and J. Zhu: Status of the PMIP4 LGM experiments: first results, comparison to PMIP3 results

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and to new climatic reconstructions, *Clim. Past,* 17, 1065–1089, *doi:* 10.5194/cp-2019-169

Zhu, J., B. Otto-Bliesner, E. Brady, C. Poulsen, J. Tierney, **M. Lofverstrom**, and P. DiNezio: Assessing equilibrium climate sensitivity of the Community Earth System Model version 2 through simulation of the last glacial maximum. *Geophys. Res. Letters,* 48 (3), e2020GL091220, doi: 10.1029/2020GL091220

Dow, W., A. Maycock, **M. Lofverstrom**, and C. J. Smith: The effect of anthropogenic aerosols on the Aleutian Low, *J. Climate*, 34 (5), pp 1725-1741, doi: 10.1175/JCLI-D-20-0423.1

2020

Muntjewerf, L., R. Sellevold, M. Vizcaino, C. Ernani da Silva, M. Petrini, K. Thayer-Calder, M. Scherrenberg, S. Bradley, J. G. Fyke, W. H. Lipscomb, **M. Lofverstrom**, and W. J. Sacks (2020): Accelerated Greenland ice sheet mass loss under high greenhouse gas forcing as simulated by the coupled CESM2.1-CISM2.1, *J. Adv. Model. Earth Syst.*, 12, e2019MS002031, doi: 10.1029/2019MS002031

Lofverstrom, M., J. G. Fyke, K. Thayer-Calder, L. Muntjewerf, M. Vizcaino, W. J. Sacks, W. H. Lipscomb, B. L. Otto-Bliesner, and S. L. Bradley (2020): An efficient ice-sheet/Earth system model spinup procedure for CESM2-CISM2: description, evaluation and broader applicability, *J. Adv. Model. Earth Syst.*, 12, e2019MS001984, doi: 10.1029/2019MS001984

Rehfeld, K., R. Hebert, J. Lora, **M. Lofverstrom**, and C. Brierley (2020): Variability of surface climate in simulations of past and future, *Earth Syst. Dynam.*, 11, 447–468, doi: 10.5194/esd-11-447-2020

Muntjewerf, L., M. Petrini, M. Vizcaino, C. Ernani da Silva, R. Sellevold, M. Scherrenberg, K. Thayer-Calder, S. Bradley, J. Lenaerts, W. H. Lipscomb, and **M. Lofverstrom** (2020): Greenland Ice Sheet Contribution to 21st Century Sea Level Rise as Simulated by the Coupled CESM2.1-CISM2.1, *Geophys. Res. Lett.*, 47, e2019GL086836, doi: 10.1029/2019GL086836

Tulenko, J. P., **M. Lofverstrom**, and J. P. Briner (2020): Ice sheet influence on atmospheric circulation explains the patterns of Pleistocene alpine glacier records in North America, *EPSL*, 534, doi: 10.1016/j.epsl.2020.116115

Lofverstrom, M. (2020): A dynamic link between precipitation extremes in western North America and Europe at the Last Glacial Maximum, *EPSL*, 534, doi: 10.1016/j.epsl.2020.116081

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2018

Liakka, J. and **M. Lofverstrom** (2018): Arctic warming induced by the Laurentide ice sheet topography, *Clim. Past* 14, 887–900, doi: 10.5194/cp-14-887-2018

Fyke, J.G., O. Sergienko, **M. Lofverstrom**, J. Lenaerts, and S. Price (2018): An overview of interactions and feedbacks between ice sheets and the Earth system, *Reviews of Geophysics* 56, doi: 10.1029/2018RG000600

Lofverstrom, M., and J. Liakka (2018): The influence of atmospheric grid resolution in a climate model-forced ice sheet simulation, *The Cryosphere*, 12, 1499–1510, doi: 10.5194/tc-12-1499-2018 (highlighted)

2017

Lofverstrom, M., and J. M. Lora (2017): Abrupt regime shifts in the North Atlantic atmospheric circulation over the last deglaciation, *Geophys. Res. Lett.*, 44, doi: 10.1002/2017GL074274

2016

Otto-Bliesner, B., A. Jahn, R. Feng, E. Brady, A. Hu, and **M. Lofverstrom** (2016): Changes in Arctic Gateways Amplify North Atlantic Warming in the Late Pliocene, *Geophys. Res. Letters*, 44, doi: 10.1002/2016GL071805 (highlighted)

Lofverstrom, M., and J. Liakka (2016): On the limited ice intrusion in Alaska at the Last Glacial Maximum, *Geophys. Res. Letters*, 43, doi: 10.1002/2016GL071012

*__Lofverstrom, M.__, R. Caballero, J. Nilsson, and G. Messori (2016): Stationary wave reflection as a mechanism for zonalising the Atlantic winter jet at the LGM, *J. Atm. Sci.*, 73, 3329–3342, doi: 10.1175/JAS-D-15-0295.1

Liakka, J., **M. Lofverstrom**, and F. Colleoni (2016): The impact of the North American glacial topography on the evolution of the Eurasian ice sheet over the last glacial cycle, *Clim. Past.*, 12, 1225–1241, doi: 10.5194/cp-12-1225-2016

2015

Pausata, F., and **M. Lofverstrom** (2015): On the enigmatic similarity in Greenland d18O between the Oldest and Younger Dryas, *Geophys. Res. Letters*, 42, doi: 10.1002/2015GL066042

*__Lofverstrom, M.__, J. Liakka, and J. Kleman (2015): The North American Cordillera – an impediment to growing the continent-wide Laurentide Ice Sheet, *J. Climate*, 28, 9433--9450, doi: 10.1175/JCLI-D-15-0044.1

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2014 *__Lofverstrom, M.__, R. Caballero, J. Nilsson, and J. Kleman, (2014): Evolution of the large-scale atmospheric circulation in response to changing ice sheets over the last glacial cycle, *Clim. Past*, 10, 1453– 1471, doi: 10.5194/cp-10-1453-2014

2011 Liakka, J., J. Nilsson, and *__M. Lofverstrom__ (2011): Interactions between stationary waves and ice sheets: linear versus nonlinear atmospheric response, *Clim. Dyn.*, 38, 1249– 1262, doi: 10.1007/s00382-011-1004-6

Other Publications

__Lofverstrom, M.__ and K. Thirumalai (2022): Thermal forcing modulates the North American Monsoon, https://doi.org/10.31223/X5Q634

__Lofverstrom, M.__ and D. Thompson (2022): Closed ocean gateways in the Canadian archipelago are key to glaciation in Scandinavia, Nature Geoscience Research Briefing

Zhu, J., B. Otto-Bliesner, E. Brady, C. Poulsen, J. Tierney, __M. Lofverstrom__, and P. DiNezio (2021): Ice Age Testing Reveals Challenges in Climate Model Sensitivity, *EOS Research Spotlight*

Otto-Bliesner, B., __M. Lofverstrom__, P. Bakker, and R. Feng (2019): Arctic warming and the Greenland Ice Sheet during the Last Interglacial as simulated by climate models: Responses and feedbacks to orbital forcing, *PAGES Science Highlights: Past Sea-Level Changes*

Fyke, J.G., O. Sergienko, __M. Lofverstrom__, J. Lenaerts, and S. Price (2018): Icy interactions, *Eos*, 99, doi: 10.1029/2018EO100915

***Lofverstrom, M.** (2014): On the interaction between ice sheets and the large-scale atmospheric circulation over the last glacial cycle, *PhD thesis*, ISBN: 978-91-7649-010-5

Work in Progress

†Badarunnisa A., __M. Lofverstrom__, and D. Thompson: Evaluating the representation of South American summer precipitation characteristics in CMIP6 pre-industrial simulations, in preparation for *J. Climate*

Harley, G., K. L. DeLong, __M. Lofverstrom__, C. A. Reese, S. J. Bentley Sr., K. Xie, S. Gonzalez, J. T. Troung, K. J. Heeter, A. L. Kaiser, and A. Caporaso: Rapid decline and mortality of a Pleistocene-aged Taxodium distichum L. (Rich.) forest now submerged in the northern Gulf of Mexico, USA, in preparation

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Liu Z., Y. Bao, L.G. Thompson, E. Mosley-Thompson, C. Tabor, G.J. Zhang, **M. Lofverstrom**, I. Montanez, and J. Oster: Tropical Mountain Ice Core d18O: Detecting Deglacial Temperature Variability in the Upper Atmosphere, in preparation for Science

Lofverstrom, M. and J. Zhu: Precipitation changes in the paleo-climate calibrated Community Earth System Model version 2, in preparation for *Geophys. Res. Letters*

Lofverstrom, M., J., Liakka, and A. Lewinschal: Linear University Model of the Atmosphere (LUMA), in preparation for *Geoscientific Model Development*

Lofverstrom, M., C. Tabor, J. Oster, I. Montanez, B. Wortham, and C. de Wet: Thermal and topographic control of the large-scale atmospheric circulation over the last deglaciation, in preparation for *J. Climate*

Meegan Kumar, D., J.E. Tierney, T. Bhattacharya, **M. Lofverstrom**, J. Zhu, and J. W. Murray: Response of the North American Monsoon to Glacial–Interglacial Climate Forcings, (in preparation

§Odalen, M. and **M. Lofverstrom**: Ocean carbon storage in the CESM2 CMIP6 ensemble, in preparation for *Geophys. Res. Letters*

Oster J., C. de Wet, C. Tabor, **M. Lofverstrom**, I. Montanez, and S. Macarewich: North Atlantic freshwater during Heinrich Events drives wetter climate with more frequent atmospheric rivers in western North America, in preparation for *Nature Communications*

Richey J., K. Thirumalai, **M. Lofverstrom**, S. Truebe, and J. Cole: Holocene Deterioration of the Rio Grande outflow into the Gulf of Mexico: A multiproxy perspective, in preparation for Nature

Russell, J., D. G. Long, P. Chang, M. Cowell, E. Curchitser, M. S. Dinniman, C. Fellows, P.J. Goodman, E.E. Hofmann, Z. Jelenak, J. Klinck, N. Lovenduski, **M. Lofverstrom**, M. Mazloff, S. Petroy, A. Polit, E. Rodriguez, O. Schofield, A. Stoffelen, R. J. Stouffer, R. Wanninkhof, C. Weimer, and X. Zeng: Measuring Winds from Space to Reduce the Uncertainty in the Southern Ocean Carbon Fluxes: Science Requirements and Proposed Mission, in review in *Geophys. Res. Letters*

Sellevold, R., and **M. Lofverstrom** et al.: Surface mass balance and climate of the Last Glacial Maximum northern hemisphere ice sheets: simulations with CESM2.1, in preparation

†Thomas, H. and **M. Lofverstrom**: On the representation of sudden stratospheric warming events in a low-top and a high-top atmosphere model, in preparation for *Geophys. Res. Letters*

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Thompson D., J. D'Olivo. **M. Lofverstrom**, E. V. Reed, J. E. Cole, G. L. Foster, M. McCulloch, N. Cantin, K. Dyez, and J. Lough: Metabolic processes dictate corals' capacity to upregulate their internal growth medium, in review in *Nature Climate Change*

Wilcox, P. and **M. Lofverstrom**: Timing of ice sheet minima in North America during the last glacial period, in preparation for *EPSL*

Media

BBC (glacial climate documentary)	2022
UN News (link)	2022
Interview in *Alberta Views Magazine*	2018

Conferences / Scholarly Presentations (since joining UA in fall 2018)

Invited Seminars & Colloquia	Cornell University	2023
	International Quaternary Webinar	2022
	Bjerknes Seminar, University of Bergen, Bergen, Norway	2022
	U. Utrecht, Utrecht, Netherlands	2022
	AMQUA, Seattle, WA	2020
	U. Arizona, Geosciences, Tucson, AZ	2019
	U. Arizona, Hydrology and Atmospheric Sciences, Tucson, AZ	2019

Conference: § Post-doctoral researcher advisee, † Graduate student advisee, ‡ Undergraduate Student Advisee, * Other Graduate or Undergraduate Student

†Thomas, H. and **M. Lofverstrom** (2023): Cold weather in a warmer world, *Oral Presentation*, GeoDaze

‡Poonawala, K., and **M. Lofverstrom** (2023): Mass Balance of the Greenland Ice Sheet in Past and Future Climates, GeoDaze

Richey J., K. Thirumalai, **M. Lofverstrom**, S. Truebe, and J. Cole (2022): Holocene Deterioration of the Rio Grande outflow into the Gulf of Mexico: A multiproxy perspective, ICP

Otto-Bliesner et al. **M. Lofverstrom** (2022): The Greenland Ice Sheet During the Last Interglacial in CESM2-CISM2, Oral presentation IPICS

Abella-Gutiérrez, J. L., **M. Lofverstrom**, D. Thompson, V. Trouet, and B. A. Black: Three centuries of multidecadal covariance between North Pacific sea surface temperature and western North American hydroclimate , Oral presentation, International Sclerochronology Conference

Oster, J. S. Macarewich, C. Tabor, **M, Lofverstrom**, B. Wortham, C. de Wet, I. Montañez (2022): North Atlantic freshwater forcing during Heinrich Events drives wetter climate in western North America, GSA

†Thomas, H. and **M. Lofverstrom** (2022): Cold weather in a warmer world, *Poster presentation*, AGU

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†Badarunnisa, A. and **M. Lofverstrom** (2022): Understanding the 'new norm' of extreme events: Atmospheric rivers and climate change, AGU

Lofverstrom, M. (2022), Is the Last Interglacial warm period a good analog for the future? *Oral Presentation*, CESM Workshop

†Berry, A., and **M. Lofverstrom** (2022): Summer precipitation patterns influence Greenland Ice Sheet regrowth during the Last Interglacial Period, *Oral Presentation*, GeoDaze

†Thomas, H., and **M. Lofverstrom** (2022): Cold weather in a warmer world, *Poster Presentation*, GeoDaze

†Badarunnisa, A., and **M. Lofverstrom** (2022): Understanding the 'new norm' of extreme events: Atmospheric rivers and climate change, *Poster Presentation*, GeoDaze

‡Malmgren, T., and **M. Lofverstrom** (2022): Differences in Annual Surface Temperature Between the Preindustrial Reference Period and the Last Interglacial Period, *Oral Presentation*, GeoDaze

‡Freeman, B., and **M. Lofverstrom** (2022): Analysis of the Spatial and Temporal Frequency of Greenland's Regional, Major Precipitation Events at the End of the 21st Century, *Oral Presentation*, GeoDaze

Tabor, C.R., **M. Lofverstrom,** J. Oster, B. Wortham, C. de Wet, C., and I. Montanez (2021): Hydrologic and isotopic changes in the Western United States at the Last Glacial Maximum, 30th anniversary PMIP

Menemenlis, S. J. M. Lora, **M. Lofverstrom**, D. Chandan: Atmospheric rivers influenced by stationary wave changes in model of mid-Piacenzian climate, 30th anniversary PMIP, 2021

Oster J., C. Tabor, **M. Lofverstrom**, B. Wortham, C. de Wet, I. Montañez (2021): Estimating deglacial precipitation change in western North America from speleothem records and isotope enabled model simulations, KR Online

†Berry, A., **M. Lofverstrom** (2021): The Climate Response to Greenland's Deglaciation in Past, Present, and Future Climates, GeoDaze

Tabor, C. R., **Lofverstrom, M.**, Oster, J., Wortham, B., de Wet, C., Montanez, I. (2021): Storminess and Isotopic Changes in the Western United States at the Last Glacial Maximum, CESM Workshop

Herrington, A., **M. Lofverstrom**, P. Lauritzen, A. Gettelman (2021): Update: Variable-resolution Arctic simulations, CESM Workshop

Lofverstrom, M., D. Thompson, B. Otto-Bliesner, E. Brady (2021): Closure of the Canadian Arctic Gateways as a key prerequisite for glacial inception in Scandinavia, *Oral Presentation*, CESM Workshop

Brady, E. C. , B. L. Otto-Bliesner, J. Zhu, R. Feng, R. Tomas, P. DiNezio, **M. Lofverstrom**, N. Rosenbloom (2020): Sensitivity of the Atlantic Meridional Overturning Circulation to Different Paleoclimate States Simulated with the Community Earth System Model, AGU Fall Meeting

*Dow, W., A. Maycock, **M. Lofverstrom**, J. Smith (2020): The Influence of Anthropogenic Aerosols On the Aleutian Low, AGU Fall Meeting

Zhu, J., B. L. Otto-Bliesner, E. C. Brady, C. J. Poulsen, J. Tierney, **M. Lofverstrom**, P. DiNezio (2020): Constraining the climate sensitivity in CESM2 through simulation of the Last Glacial Maximum AGU Fall Meeting

§Odalen M., **M. Lofverstrom** (2020): How ocean circulation and its forcing are linked to global ocean carbon storage in warm climates simulated with CESM2, AGU Fall Meeting

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*Menemenlis, S., J. M. Lora, **M. Lofverstrom**, D. Chandan, D. E. Ibarra (2020): Regional precipitation influenced by stationary wave changes in model of mid-Piacenzian climate, AGU Fall Meeting

*Menemenlis, S., J. M. Lora, **M. Lofverstrom**, D. Chandan (2020): Atmospheric rivers influenced by stationary wave changes in model of mid-Piacenzian climate, IARC

Rehfeld, K., R. Hebert, **M. Lofverstrom**, J. Lora, C. Brierley (2020): Surface climate variability of the Earth in past and future, *Oral Presentation*, PMIP4 Nanjing

Rehfeld, K., R. Hebert, **M. Lofverstrom**, J. Lora, C. Brierley (2020): Variability of surface climate in simulations of past and future, ***Oral Presentation***, European Geosciences Union

*Muntjewerf L., M. Petrini, M. Vizcaino, C. Ernani da Silva, R. Sellevold, M. Scherrenberg, K. Thayer-Calder, S. Bradley, J. Lenaerts, W. Lipscomb, **M. Lofverstrom** (2020): Greenland ice sheet Contribution to 21st century sea level rise as modelled by the coupled CESM2.1-CISM2.1, *Oral Presentation*, European Geosciences Union

Vizcaino, M., L. Muntjewerf, R. Sellevold, C. Ernani da Silva, M. Petrini, K. Thayer-Calder, M. Scherrenberg, S. Bradley, J. Fyke, W. Lipscom, **M. Lofverstrom**, W. Sacks (2020): Coupled ice-climate simulation of future Greenland ice sheet evolution: mechanisms, thresholds and feedbacks for accelerated mass loss, *Oral Presentation*, European Geosciences Union

*Dow, W., A. Maycock, **M. Lofverstrom**, C.J. Smith (2020): The Influence of Anthropogenic Aerosols on the Aleutian Low, *Poster Presentation*, European Geosciences Union

Sommers, A., B. Otto-Bliesner, B., W.H. Lipscomb, **M. Lofverstrom**, S. Shafer, P. Bartlein, E. Brady, E. Kluzek, G. Leguy, K. Thayer-Calder, R. Tomas (2020): Retreat of the Greenland Ice Sheet during the Last Interglacial, *Oral Presentation*, NCAR Paleo working group meeting (winter)

Tabor, C., **M. Lofverstrom**, I.P. Montanez, C. de Wet, B. Wortham (2020): Using iCESM to Understand Hydroclimate in Southwest North America, *Oral Presentation*, NCAR Paleo working group meeting (winter)

Bradley, S.L., M. Petrini, M., Vizcaino, E., Kluzek, B.S. Lecavalier, J. Ely, W.H. Lipscomb, W. Sacks, **M. Lofverstrom**, C. Clark (2020): Fully coupled simulation of the Northern Hemisphere climate and ice sheets during the Last Glacial Maximum with CESM2.1/CISM2.1, *Oral Presentation*, Quaternary Research Associations

Herrington, A., P.H. Lauritzen, **M. Lofverstrom**, A. Gettelman, W. Lipscomb, G. Leguy, R. Wijngaard, C. Craig, B. Eaton, C. Fisher, E. Kluzek (2020): Progress on vr-CESM for polar science, *Oral Presentation*, NCAR Polar working group meeting (summer)

Herrington, A., P.H. Lauritzen, **M. Lofverstrom**, A. Gettelman, W. Lipscomb, C. Craig, B. Eaton, C. Fisher, E. Kluzek (2020): Impact of horizontal resolution on the meteorology and climate of Greenland, *Oral Presentation*, NCAR Polar working group meeting (summer)

Oster, J.L., C. Tabor, **M. Lofverstrom**, I.P. Montanez, C. de Wet, B. Wortham, C. He, Z. Liu, J. Lora (2020): Estimating deglacial precipitation changes in western North America from speleothem records and isotope-enabled model simulations, *Oral Presentation*, K9, Innsbruck

Lofverstrom, M., D. Thompson, E. Brady, B. Otto-Bliesner (2020): The importance of Arctic gateways for Northern Hemisphere glacial inception, *Oral Presentation*, AMQUA, Seattle, WA

Lofverstrom, M., M. Kageyama (2020): The PMIP4-CMIP6 Last Glacial Maximum experiments: preliminary results and comparison with the PMIP3-CMIP5 simulations, *Oral Presentation*, NCAR paleoclimate working group meeting (winter)

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Tabor, C., **M. Lofverstrom**, J. Oster, I. P. Montanez, C. de Wet, B. Wortham, C. He, Z. Liu, J. Lora (2019): High-Resolution Simulations for Understanding the Climate of Southwest North America at the Last Glacial Maximum, *Oral Presentation*, American Geophysical Union

Sommers, A., B. Otto-Bliesner, B., W.H. Lipscomb, **M. Lofverstrom**, S. Shafer, P. Bartlein, E. Brady, E. Kluzek, G. Leguy, K. Thayer-Calder, R. Tomas (2020): Retreat of the Greenland Ice Sheet during the Last Interglacial, *Oral Presentation*, American Geophysical Union

Oster, J.L., C. Tabor, **M. Lofverstrom**, I.P. Montanez, C. de Wet, B. Wortham, C. He, Z. Liu (2019): Comparing Precipitation Seasonality During the Last Deglaciation from Speleothem Records and Isotope-enabled Model Simulations, *Oral Presentation*, American Geophysical Union

Ashokkumar, L., C. Harig, **M. Lofverstrom** (2019): 21st century estimates of volume and mass loss rates from glaciers using a GRACE constrained mass balance model under climate emission scenarios, *Poster Presentation*, American Geophysical Union

Lofverstrom, M., D. Thompson, E. Brady, B. Otto-Bliesner (2019): The importance of Arctic gateways for Northern Hemisphere glacial inception, *Oral Presentation*, American Geophysical Union (AGU)

Lofverstrom, M. (2019): On the link between waveguides, quasi-stationary waves, and jet zonalisation at the Last Glacial Maximum, *Poster Presentation,* Past 2 future (P2F) University College London, London, UK

Tabor. C., **M. Lofverstrom**, B. Wortham I.P. Montanez Oster, J.L., , C. de Wet, C. He, Z. Liu (2019): Climate Change in Southwest North America During the Last Deglaciation, Poster Presentation, NCAR Isotope Modeling Workshop

Lipscomb, W., et al. **M. Lofverstrom** (2019): Land Ice Working Group overview, *Oral Presentation*, NCAR Land-ice working group meeting

Lofverstrom, M. (2019): On the link between waveguides, quasi-stationary waves, and jet zonalisation at the Last Glacial Maximum, *Oral Presentation*, CESM Winter Workshop, Boulder, CO

Bradley, S. L., M. Petrini, M., Vizcaino, E., Kluzek, B. S. Lecavalier, J. Ely, W. H. Lipscomb, W. Sacks, **M. Lofverstrom**, C. Clark (2019): Fully coupled simulation of the Northern Hemisphere climate and ice sheets during the Last Glacial Maximum with CESM2.1/CISM2.1, *Oral Presentation*, International Union for Quaternary Research

*Muntjewerf, L., W. Lipscomb, K. Thayer-Calder, W. Sacks, S. Bradley, **M. Lofverstrom**, J. Fyke, C. Ernani da Silva, R. Sellevold, M. Petrini, M. Vizcaino (2019): Future evolution of the Greenland Ice Sheet in a coupled climate and ice sheet model: CESM2.1-CISM2.1 contribution to ISMIP6, *Oral Presentation*, European Geosciences Union

Sommers, A., **M. Lofverstrom**, W. Lipscomb, B. Otto-Bliesner (2019): Characteristics of the Greenland ice sheet during the Last Interglacial: A view from previous simulations, and upcoming plans, *Oral Presentation*, NCAR Land-ice working group meeting

Lipscomb, W., et al. M. Lofverstrom (2019): Progress in modeling ice sheets in the CESM, *Oral Presentation*, NCAR Land-ice working group meeting (winter)

*Muntjewerf, L., W. Lipscomb, K. Thayer-Calder, W. Sacks, S. Bradley, **M. Lofverstrom**, J. Fyke, C. Ernani da Silva, R. Sellevold, M. Petrini, M. Vizcaino (2019): Future evolution of the Greenland Ice Sheet in a coupled climate and ice sheet model: CESM2.1-CISM2.1 contribution to ISMIP6, *Oral Presentation*, NCAR Polar working group meeting (winter)

*Muntjewerf, L., **M. Lofverstrom**, W. Lipscomb, K. Thayer-Calder, W. Sacks, S. Bradley, J. Fyke,

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C. Ernani da Silva, R. Sellevold, M. Petrini, M. Vizcaino (2019): Processes in the future evolution of the Greenland Ice Sheet in a coupled climate and ice sheet model, *Oral Presentation*, NCAR Land-ice working group meeting (winter)

*Muntjewerf, L., **M. Lofverstrom**, W. Lipscomb, K. Thayer-Calder, W. Sacks, S. Bradley, J. Fyke, C. Ernani da Silva, R. Sellevold, M. Petrini, M. Vizcaino (2019): Ice-sheet/climate model coupling: An efficient spin-up procedure for CESM2.1 and CISM2.1, *Oral Presentation*, NCAR Land-ice working group meeting (winter)

Bradley, S.L., M. Petrini, M., Vizcaino, E., Kluzek, B.S. Lecavalier, J. Ely, W.H. Lipscomb, W. Sacks, **M. Lofverstrom**, C. Clark (2019): Simulating the Northern Hemisphere climate and ice sheets during the last deglaciation with CESM2.1/CISM2.1, *Oral Presentation*, NCAR Land-ice working group meeting (winter)

Tabor**,** C., **M. Lofverstrom**, I. Montañez, J. Oster, B. Wortham, C. de Wet (2019): A mechanistic understanding of precipitation isotopic changes in the Western United States since the **LGM**, *Oral Presentation*, European Geosciences Union

*Tulenko, J, **M. Lofverstrom**, J. Briner (2018): Preserving the MIS 4 Glacial Record in Beringia: Laurentide Ice Sheet Configuration Disrupts Largescale Atmospheric Circulation During MIS2, *Poster Presentation*, American Geophysical Union

Awarded Grants and Contracts

Federal

2022-2025

Title of Grant: A Paleoclimate reanalysis of the coupled Greenland Ice Sheet – climate evolution during the Last Interglacial
Commitment (person-month) (Y1/Y2/Y3): 0.5/0.5/0.5
Role: co-PI
Other PIs/co-PIs:); M. Osman (PI), J. Tierney (co-PI)
Source of support: OPP-2202667
Period covered: 9/1/2022 – 2025
Total Award Amount: $350,000

2020-2023

Title of Grant: High resolution simulations of hydroclimate changes in South America through the Holocene and instrumental era
Commitment (person-month) (Y1/Y2/Y3/Y4): N/A
Role: PI
Source of support: University Corporation for Atmospheric Research (UCAR), Computational & Information Systems Lab (CISL)
Period covered: 11/1/2020 – 10/31/2023
Total Award Amount: 9,475,000 core-hours on Cheyenne Supercomputer

2020-2023

Title of Grant: Unravelling the Signals in Tropical Pacific Lake Archives: Towards Improved Holocene Hydroclimate Reconstructions
Commitment (person-month) (Y1/Y2/Y3): 0.5/0.5/0.5

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Role: PI
Other PIs/co-PIs:); D. Thompson (co-PI). M. Bush (co-PI); D. Rodbell (co-PI)
Source of support: NSF-AGS-P2C2
Period covered: 7/1/2020 – 6/30/2023
Total Award Amount: $751,462 (UA: $547,191)

2019-2023

Title of Grant: High resolution simulations of the last deglaciation for understanding abrupt hydroclimate change in Southwest North America
Commitment (person-month) (Y1/Y2/Y3): N/A
Role: co-PI
Other PIs/co-PIs: C. Tabor (PI)
Source of support: University Corporation for Atmospheric Research (UCAR), Computational & Information Systems Lab (CISL)
Period covered: 10/1/2019 – 8/31/2021
Total Award Amount: 15,800,000 core-hours on Cheyenne Supercomputer

2018-2023

Title of Grant: Moisture source and storm track variability in western North America during the last deglaciation and Holocene
Commitment (person-month) (Y1/Y2/Y3/Y4): N/A
Role: co-PI
Other PIs/co-PIs: J. Oster (PI), C. Tabor (co-PI), I. Montanez (co-PI)
Source of support: University Corporation for Atmospheric Research (UCAR), Computational & Information Systems Lab (CISL)
Period covered: 5/1/2018 – 8/31/2021
Total Award Amount: 10,000,000 core-hours on Cheyenne Supercomputer

2019

Title of Grant: Collaborative Research: Multi-Time-Scale Climate Dynamics in California: An Integrated Multi-Proxy Stalagmite, Monitoring, and Modeling Approach
Commitment (person-month) (Y1): N/A
Role: co-PI
Other PIs/co-PIs: C. Tabor (PI)
Source of support: National Center for Supercomputing Applications (NCSA)
Period covered: 5/1/2019 – 12/31/2019
Total Award Amount: 21,000,000 core-hours on Bluewaters Supercomputer

2017-2019

Title of Grant: Transient evolution of the Greenland Ice Sheet over the Last Interglacial warm period
Commitment (person-month) (Y1/Y2): N/A
Role: PI
Other PIs/co-PIs: none
Source of support: University Corporation for Atmospheric Research (UCAR), Computational & Information Systems Lab (CISL)

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Period covered: 5/1/2017 – 8/31/2019
Total Award Amount: 8,400,000 core-hours on Cheyenne Supercomputer

University of Arizona

2019-2021

Title of Grant: Thermal and topographic control of the extratropical atmospheric circulation
Commitment (person-month) (Y1/Y2): 1/1
Role: PI
Other PIs/co-PIs: none
Source of support: University of Arizona
Period covered: 7/1/2019 – 7/31/2021
Total Award Amount: $15,000