Matthew B. Osman

Personal information

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Professional appointments

Oct. 2019 – **Postdoctoral Research Associate**, *Climate Systems Center, University of Arizona*, USA

Research foci: data assimilation, computational climatology, climate dynamics

Education

Sep. 2014–Jul. 2019 **Ph.D. in Climate Science**, *Massachusetts Institute of Technology / Woods Hole Oceanographic Institution (MIT/WHOI) Joint Program*, USA

Thesis: Greenlandic ice archives of North Atlantic Common Era climate

Research foci: Arctic/midlatitude climatology, climate proxy development, climate data analysis and statistics, inverse methods

Sep. 2010–May 2014 **BA in Geology *with Distinction***, *Augustana College*, USA

Minors: Mathematics and Environmental Studies

Graduated summa cum laude

Study abroad: East-Asia term (Japan, Taiwan, Hong Kong, & China; 4 months)

Publications

In preparation

~ **Osman, M.B.** and S.B. Das (antic. Oct. 2021 submission): Rapid Greenland climate changes foreshadow collapse of Norse settlements, *in prep for Geophysical Research Letters.*

~ Hakim, G. et al. (antic. Dec. 2021 submission): Tropical hydroclimate changes and atmospheric dynamics since the Last Glacial Maximum, *in prep for Geophysical Research Letters.*

~ **Osman, M.B.** (antic. Jan. 2022 submission): The deglacial evolution of Northern Hemisphere jet stream changes, *in prep for Journal of Geophysical Research.*

In press

~ **Osman, M.B.**, J.E. Tierney, J. Zhu, R. Tardif, J. King, G.J. Hakim and C.J. Poulsen: Globally resolved surface temperatures since the Last Glacial Maximum, *in press at Nature*.

Non-peer reviewed pre-print available at EarthArXiV: https://doi.org/10.31223/X5S31Z

Published

Sep. 2021 **Osman, M.B.**, S. Coats, J.R. McConnell, N. Chellman, S.B. Das: North Atlantic jet stream projections from a 1,250-year context, *PNAS*, **118**(38), e2104105118, 2021.

Sep. 2021 **Osman, M.B.**, B.E. Smith, L.D. Trusel, S.B. Das, J.R. McConnell, N. Chellman, M. Arienzo, and H. Sodemann: Enhanced sensitivity of west Greenland ice caps to last millennium climate change, *Nature Geoscience*, **14**, 756–761 (2021).

Aug. 2021 Criscitiello, A.S., T. Geldsetzer, R. Rhodes, M. Arienzo, J.R. McConnell, N. Chellman, **M.B. Osman**, J.J. Yackel, and S. Marshall: Marine aerosol records of Arctic sea-ice and polynya variability from new Ellesmere and Devon Island firn cores, Nunavut, Canada, *JGR Oceans*, **126**, e2021JC017205, 2021. `

May 2019 **Osman, M.B.**, Das, S.B., Trusel, L.D., Evans, M., Fischer, H., Grieman, M., Kipfstuhl, S., McConnell, J.R., Saltzman, E.: Industrial-era decline of subarctic Atlantic productivity, *Nature*, **569**, 551-555, 2019.

Dec. 2018 Trusel, L.D., Das, S.B., ***Osman, M. B.**, et al.: Nonlinear rise in Greenland runoff in response to post-industrial Arctic Warming, *Nature*, **564**, 104–108, 2018.

Nov. 2017 **Osman, M.B.**, Das, S.B., Marchal, O., and Evans, M.J.: Methanesulfonic acid (MSA) migration in polar ice: Data synthesis and theory, *The Cryosphere*, **11**, 2439-2462, 2017. *(Study selected as a 2017 Research Highlight article)*

Nov. 2017 **Osman, M.,** Zawadowicz, M. A., Das, S. B., and Cziczo, D. J.: Real time analysis of insoluble particles in glacial ice using single particle mass spectrometry, *Atmos. Meas. Tech.*, **10**, 4459-4477, 2017.

Selected abstracts and invited talks (<5 yrs old)

** denotes abstract selected as a talk, ** denotes invited talk*

Ant. Dec. 2021 * **Osman, M.B.**, "Global temperature changes since the Last Glacial Maximum: new insights from models and proxies," *American Geophysical Union Fall Meeting*, New Orleans, LA, USA.

Nov. 2021 ** **Osman, M.B.**, "Climate science in the context of 21st century environmental challenges," *Trinity College Dublin (Dept. of Geography)*, Dublin, Ireland

Nov. 2021 ** **Osman, M.B.**, "Global temperature changes since the Last Glacial Maximum from models and proxies," *National Center for Atmospheric Research (NCAR) Climate and Global Dynamics Seminar Series*, Boulder, CO, USA.

Oct. 2021 ** **Osman, M.B.**: In order to form a more perfect union: Combining climate models and paleo-proxies to uncover the mechanisms of regional and global-scale change, *International Pacific Research Center Climate Seminar Series*, University of Hawaii, Manoa, HI, USA.

Sep. 2021 ** **Osman, M.B.**: Assimilation of models and proxies from the Last Glacial Maximum to present," *COSIM Climate Seminar*, Los Alamos National Laboratory.

Jul. 2021 ** **Osman, M.B.**: North Atlantic and Global Climatic Change: separating the [paleo]signal from the [paleo]noise, *Earth Science Department Seminar,* Durham University, UK.

Mar. 2021 ** **Osman, M.B.**: Global climate variability since the Last Glacial Maximum, *Udden Geology Seminar,* Augustana College.

Dec. 2020 * **Osman, M.B.**, J.E. Tierney, Tardif, R., J. Zhu, J. King, G.J. Hakim, and C. Poulsen: Reanalysis of global temperature variability during the last 24,000 years, *American Geophysical Union Fall Meeting*, San Francisco, CA, USA.

Nov. 2020 * **Osman, M.B.**, J.E. Tierney: Globally resolved temperature variability since the Last Glacial Maximum, *PAGES-PMIP Working Group Meeting on Quaternary Interglacials*, remote.

Selected as 1 of 3 plenary talks.

Dec. 2019 * **Osman, M.B.**, S. Coats, J.R. McConnell, N. Chellman, and S.B. Das: Enhanced North Atlantic jet-stream variability coeval with Arctic warming during the last millennium, *American Geophysical Union Fall Meeting*, San Francisco, CA, USA.

Dec. 2018 * **Osman, M.B**, Smith, B. E., Das, S. B., McConnell, J. R., Trusel, L. D., Sodemann, H.: Ice core evidence of enhanced multi-decadal to centennial-scale climate variability in west Greenland during the last millennium, *American Geophysical Union Fall Meeting*, Washington, D.C.

Mar. 2018 ** **Osman, M.B**, Das, S., Trusel, L., Evans, M., McConnell, J., Saltzman, E., Fischer, H., Grieman, M., and Kipfstuhl, S.: Recent reversal of a multicentury subarctic Atlantic productivity decline, *GFI/BCCR Department Seminar*, Bjerknes Centre for Climate Research, University of Bergen., and the Institute of Marine Research.

Jan. 2018 ** **Osman, M.B**, Das, S., Trusel, L., McConnell, J., Evans, Smith, B.: Ice core records of Common Era maritime climate from West Greenland ice caps, *Neils Bohr Institute Department Seminar*, University of Copenhagen.

Apr. 2017 * **Osman, M.B**, Das, S., Marchal, O., Evans, M.: Post-depositional migration and signal reconstruction of methanesulfonic acid (MSA) in polar ice cores, *European Geophysical Union (EGU) meeting*, Vienna, Austria.

Selected honors and awards

Aug. 2015–Aug. 2019 **National Defense Science and Engineering Graduate (NDSEG) fellowship**

U.S. Department of Defense-funded

Jan. 2018–Jun. 2018 **Ocean Outlook Research Fellowship**

5-month research fellowship, Bjerknes Centre for Climate Research, Norway

Sep. 2014–Aug. 2015 **Fulbright Research Fellowship to Sweden (offer declined)**

U.S. Department of State-funded research fellowship to University of Stockholm

May 2014 **Dr. C. Leland Horberg Scholarship in Geology**

Awarded to top graduating Augustana College Geology senior

Apr. 2014 **Phi Beta Kappa** *Zeta Chapter of Illinois*

Augustana College faculty-nominated

Aug. 2013–May 2014 **Omicron Delta Kappa** *National Leadership Honor Society*

	President, Augustana College
Aug. 2013–May 2014	**Sigma Gamma Epsilon** *National Earth Science Honor Society*
	President, Augustana College
Mar. 2013	**Glenn T. Seaborg Science Award *finalist***
	Augustana College's sole nominee (1/2600 students)
June 2012	**NASA Earth System Field Research Award (US $2,000)**
	Juneau Ice Field Research Program award fellowship

Last updated: Oct. 2021