

Aaron Match

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PROFILE	My name is Aaron Match. I am an atmospheric scientist with a focus on stratospheric dynamics, stratospheric chemistry, and climate science. I am an NSF Postdoctoral Research Fellow in Atmospheric and Geospace Sciences working with Professor Edwin Gerber at New York University. My work revisits mechanistic explanations for complex results through the analysis of paradigmatic models.	
JOB	New York University , New York, NY	
	▪ NSF Postdoctoral Research Fellow in Atmospheric and Geospace Sciences	2021-2023
	• Supervisor: Prof. Edwin P. Gerber	
EDUCATION	Princeton University , Princeton, NJ	
	▪ Ph.D. Atmospheric and Oceanic Sciences (AOS)	2015 – 2021
	• Thesis: <i>The Unified Internal Dynamics and Global Interactions of the Quasi-Biennial Oscillation</i>	
	• Advisor: Prof. Stephan Fueglistaler	
	Cornell University , Ithaca, NY	
	▪ B.S. Atmospheric Science, minor in Mathematics, summa cum laude	2011 – 2015
	• Thesis: <i>Diagnosing the structure of finite amplitude wave activity in the polar stratosphere</i>	
	• Advisor: Prof. Gang Chen	
PUBLICATIONS	<u>A. Match</u> , E.P., Gerber, 2022: Tropospheric expansion under global warming reduces tropical lower stratospheric ozone . <i>Geophysical Research Letters</i> , 49, 19, 1-12.	
	<u>A. Match</u> , S. Fueglistaler, 2021: Large internal variability precludes global warming signal detection in observed lower stratospheric QBO amplitude . <i>Journal of Climate</i> , 34, 24, 9823–9836.	
	<u>A. Match</u> , S. Fueglistaler, 2021: Anomalous dynamics of QBO disruptions explained by 1D theory with external triggering . <i>Journal of the Atmospheric Sciences</i> , 78, 2, 373-383.	
	<u>A. Match</u> , S. Fueglistaler, 2020: Mean flow damping forms the buffer zone of the Quasi-Biennial Oscillation: 1D theory . <i>Journal of the Atmospheric Sciences</i> , 77, 1955-67.	
	<u>A. Match</u> , S. Fueglistaler, 2019: The buffer zone of the Quasi-Biennial Oscillation . <i>Journal of the Atmospheric Sciences</i> , 76, 11, 3553-3567.	
	A. Butler, D. Seidel, S.C. Hardiman, N. Butchart, T. Birner, <u>A. Match</u> , 2015: Defining sudden stratospheric warmings . <i>Bulletin of the American Meteorological Society</i> , 96, 11, 1913–1928.	
AWARDS & SCHOLARSHIPS	Recognized for Service and Outreach by Princeton Department of Geosciences	2021
	Princeton Energy and Climate Scholar	2017 – 2019
	Graduate Research Fellowship, National Science Foundation	2016 – 2019
	Centennial Fellowship in the Natural Sciences, Princeton University	2015 – 2019
	Merrill Presidential Scholar, Cornell University	2015
	Academic Excellence in Atmospheric Sciences Award, Cornell University	2015
	Barry M. Goldwater Scholarship	2014 – 2015
	NOAA Ernest F. Hollings Scholarship	2013 – 2015
	Orville Family Endowed Scholarship, American Meteorological Society	2014
	Freshman Undergraduate Scholarship, American Meteorological Society	2011
TEACHING	Assistant-in-Instruction, GEO 361: Earth’s Atmosphere. Prof. Stephan Fueglistaler	Fall 2019
	Assistant, FRS 151: Time Capsules for Climate Change. Prof. Rob Socolow	Fall 2018

RESEARCH INTERNSHIPS	NOAA Hollings: Geophysical Fluid Dynamics Laboratory, Princeton, NJ	2014
	<ul style="list-style-type: none"> • Project: “Sensitivities of stratospheric aerosol dispersal to variations in location and timing” • Advisors: Jasmin John and Dr. Larry Horowitz 	
	NSF REU: Center for Multiscale Modeling of Atmospheric Processes, Fort Collins, CO	2013
	<ul style="list-style-type: none"> • Project: “Dynamically motivating a definition for sudden stratospheric warmings” • Advisor: Prof. Thomas Birner 	
OUTREACH	Founding member, Climate Up Close. climateupclose.org	2019-Pres.
	Climate scientists sharing the essentials of climate science in person with a broad audience. Lecture, Q&A, demos.	
	<ul style="list-style-type: none"> • Summer 2019 Tour of Central PA: 3 churches, 3 libraries, synagogue, meetinghouse, private home • Winter 2020 Tour of Philadelphia, PA: Synagogue, Friends Center, library, private home • January 2022 Tour of Florida Panhandle: Library, brewery, synagogue, ClimateFest, state park • Summer 2022 tour of Central New Jersey: Architecture firm, county park, Quaker meeting, private presentations 	
	Co-presenter, Princeton Day School Energy and Climate Scholars, 3 presentations	2018-2019
	Co-organizer, AOS workshop on Tropical Dynamics, Princeton University	2017
	Co-organizer, AOS workshop on Climate Engineering, Princeton University	2016
PROFESSIONAL SERVICE	▪ Student member, AMS Middle Atmosphere Committee	2021
	▪ Student member, AMS Atmospheric and Oceanic Fluid Dynamics Committee	2017-2019
	▪ Reviewer: <i>Geophysical Research Letters</i> , <i>Atmospheric Chemistry and Physics</i> , <i>Quarterly Journal of the Royal Meteorological Society</i> , <i>Journal of Climate</i>	
SELECTED PRESENTATIONS	▪ <u>A. Match</u> . “The Decade the Quasi-Biennial Oscillation Faltered: Do disruptions pose a crisis to QBO science?”	
	• Talk. American Meteorological Society 23 rd conference on Atmospheric and Oceanic Fluid Dynamics, Breckenridge, CO, Jun 2022	
	▪ <u>A. Match</u> . “The Buffer Zone of the QBO: Theory of Formation and Future Projections”	
	• Invited talk. 102 nd American Meteorological Society Annual Meeting, 21 st Conference on the Middle Atmosphere, Jan 2022	
	▪ <u>A. Match</u> . “Stratospheric dynamics for Tropical Tropopause Layer scientists.” Talk.	
	• <i>NSF PIRE-CIRRUS student/postdoc seminar</i> , remote, Dec 2020.	
	▪ <u>A. Match</u> , S. Fueglistaler. “QBO inference in reanalyses and idealized models: The buffer zone and disruptions.” Talk.	
	• <i>NCAR Whole Atmosphere Community Climate Model (WACCM) development team meeting</i> , remote, Nov 2020.	
	• <i>Stanford University Climate, Atmosphere, and Ocean Dynamics Seminar (CLAOD) seminar</i> , remote, Nov 2020.	
	• <i>NASA Global Modeling and Assimilation Office (GMAO) informal QBO team</i> , remote, Oct 2020.	
	• <i>Lutsko group meeting at Scripps Institute of Oceanography</i> , remote, Oct 2020.	
	▪ <u>A. Match</u> , S. Fueglistaler. “The Buffer Zone of the Quasi-Biennial Oscillation: Formation and Variability.”	
	• <i>American Meteorological Society Annual Meeting</i> , Boston, MA, USA, Jan 2020. Poster.	
	• <i>Atmospheric Circulation in a Changing Climate Workshop</i> , Madrid, Spain, Oct 2019. Poster.	
	▪ <u>A. Match</u> , S. Fueglistaler. “The Case for a Resilient Quasi-Biennial Oscillation.”	
	• 22 nd <i>Atmospheric and Oceanic Fluid Dynamics Conference</i> , Portland, Maine, Jun 2019. Poster.	
	• <i>IUGG General Assembly</i> , Montreal, QC, CA, Jun 2019. Talk.	
	• <i>Graduate Climate Conference</i> , Woods Hole, MA, Nov 2019. Talk.	
	▪ <u>A. Match</u> , S. Fueglistaler. “What can observed temperatures tell us about stratospheric dynamics over the past 40 years?” 19 th <i>Conference on the Middle Atmosphere</i> , Portland, Oregon, Jun 2017. Talk.	

- A. Match, M. Abalos, J. Sheng, A. Stenke, D. Paynter, S. Fueglistaler. “Stratospheric dynamics following the eruption of Mt. Pinatubo.”
 - *2nd Stratospheric Sulfur and Its Role in Climate Workshop*, Potsdam, Germany, Apr 2016. Talk.
 - *European Geosciences Union General Assembly*, Vienna, Austria, Apr 2016. Poster.
- A. Match, G. Chen. “Diagnosing the structure of finite amplitude wave activity in the polar stratosphere,” *20th Atmospheric and Oceanic Fluid Dynamics Conference*, Minneapolis, MN, USA, Jun 2015. Poster.*
- A. Match, J. John, L. Horowitz. “Sensitivities of stratospheric aerosol dispersal to variations in location and timing,” *18th Conference on the Middle Atmosphere, American Meteorological Society*, Phoenix, AZ, USA, Feb 2014. Talk.*
- A. Match and T. Birner, “Dynamically motivating a definition for sudden stratospheric warmings,” *26th Conference on Climate Variability and Change, American Meteorological Society*, Atlanta, GA, USA, Feb 2014. Poster.

*Denotes best student presentation award