JUAN M. LORA

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Education

Ph.D., Planetary Sciences, University of Arizona 2014
B.S., Astronomy, *magna cum laude*, University of Southern California 2009

Appointments and Research Experience

Assistant Professor, Yale University 2019–present
Department of Earth and Planetary Sciences

Visiting Assistant Researcher, University of California, Los Angeles 2019
Department of Earth, Planetary, and Space Sciences

Postdoctoral Fellow, University of California, Los Angeles 2014–2018
Department of Earth, Planetary, and Space Sciences

Graduate Research and Teaching Assistant, University of Arizona 2009–2014
Department of Planetary Sciences

Research Associate, NASA Academy, Goddard Space Flight Center 2008

Undergraduate Researcher, University of Southern California 2007–2009

Additional Training

Effectively Communicating Science: Expert Witness Training Academy, 2019
Mitchell Hamline School of Law, Saint Paul, MN

Urbino Summer School in Paleoclimatology, Urbino, Italy 2016

GFDL Summer School on Atmospheric Modeling, Princeton, NJ 2012

Mission Involvement

Dragonfly Co-Investigator, 2017–present
NASA's *Dragonfly* mission to Titan (New Frontiers 4)

Honors and Awards

Arthur Greer Memorial Prize for Outstanding Research, Yale University 2023
Harold C. Urey Prize in Planetary Science, AAS Division for Planetary Sciences 2022
NASA Planetary Science Early Career Award 2022
Ronald Greeley Early Career Award, American Geophysical Union 2020
NASA Planetary Science Early Career Fellowship 2017
Gerard P. Kuiper Memorial Award, University of Arizona 2014
College of Science Graduate Teaching/Mentoring Award, University of Arizona 2011
Golden Key International Honour Society 2010
Renaissance Scholar Award, USC 2009
Phi Beta Kappa Undergraduate Award 2009
Dean Joan M. Schaefer Scholarship 2007–2009
USC Provost's Undergraduate Research Fellowship 2007–2009
Albert Fisher Science Scholarship 2007–2008

Funded Grants and Fellowships

NASA Planetary Science Early Career Award: *Disseminating the science of planetary atmospheres and climates* (Principal Investigator) 2022–2027

Yale Planetary Solutions Project Seed Grants: *Simulating Pliocene climate as a blueprint for future warming: From cloud physics and ocean circulation to extreme precipitation and droughts* (Co-Investigator) 2022–2023

NASA Mars Data Analysis Program: *Annular modes of variability in the Martian atmosphere* (Co-Investigator*) 2021–2024
*Principal Investigator is J.M. Battalio, current postdoctoral advisee

NSF P2C2: *Collaborative Research: An integrated model-proxy approach to understanding Western US hydroclimate change since the last glacial period* (Co-Principal Investigator)	2021–2024
NASA Interdisciplinary Consortia for Astrobiology Research: *Alternative Earths – how to build and sustain a detectable biosphere* (Co-Investigator)	2020–2025
NASA Cassini Data Analysis Program: *The dynamics and seasonal evolution of Titan's polar vortex* (Principal Investigator)	2020–2022
NASA Cassini Data Analysis Program: *DeltaT: Dynamics and detectability of deltas on Titan* (Co-Investigator)	2020–2022
NASA New Frontiers Program: *Dragonfly, Phase B* (Co-Investigator)	2019–2022
NSF P2C2: *Collaborative Research: Elucidating the drivers and consequences of changes in atmospheric rivers from the Last Glacial Maximum to the present day* (Co-Principal Investigator)	2019–2022
NASA Solar System Workings: *The role of moist convection in Titan's hydrologic cycle and general circulation* (Principal Investigator)	2017–2021
University of California Chancellor's Postdoctoral Fellowship	2017–2019
California Alliance (NSF-AGEP) Postdoctoral Fellowship	2017–2019
NASA Cassini Data Analysis and Participating Scientist Program: *Understanding the controlling factors of Titan's climate, weather and methane hydrology in space and time* (Co-Investigator)	2016–2019
NSF AGS Postdoctoral Fellowship: *Impacts of large-scale dynamics on regional climate sensitivity: Model-paleodata comparisons in three mid-latitude regions* (Principal Investigator)	2015–2017
NASA Earth and Space Science Fellowship: *Modeling Titan's atmospheric dynamics and interaction with methane* (Student Investigator)	2012–2014

Teaching

Yale Courses:

EPS 140: *The Atmosphere, the Ocean, and Climate Change*, 37 students. Course Director/Instructor; 36 lectures.	Spring 2023
EPS 750: *Seminar on Planetary Atmospheric Dynamics*, 2 students, 3 guest students. Course Director; weekly 2-hour sessions.	Fall 2022
EPS 620: *Essentials of Earth and Planetary Sciences*, 25 students. Co-instructor, 2 lectures.	Fall 2022
EPS 322/522: *Physics of Weather and Climate*, 12 students. Course Director/Instructor; 25 lectures.	Spring 2022
EPS 756: *Seminar in Earth System Science*, 8 students. Co-Instructor; weekly 2-hour sessions.	Spring 2022
EPS 140: *The Atmosphere, the Ocean, and Climate Change*, 19 students. Course Director/Instructor; 36 lectures.	Spring 2021
EPS 756: *Seminar in Earth System Science*, 6 students, 10 guest students. Co-Instructor; weekly 2-hour sessions.	Spring 2021
EPS 750: *Seminar on Planetary Atmospheric Dynamics*, 5 students, 2 guest students. Course Director; weekly 2-hour sessions.	Fall 2020
EPS 755: *Seminar in Earth System Science*, 10 students, 3 guest students. Co-Instructor; weekly 2-hour sessions.	Fall 2020

G&G 322/522: *Physics of Weather and Climate*, 13 students. Spring 2020
Course Director/Instructor; 25 lectures.

G&G 140: *The Atmosphere, the Ocean, and Climate Change*, 27 students. Fall 2019
Co-Director/Co-Instructor; 15 of 35 lectures.

Additional Teaching:

Rossbypalooza Summer School, University of Chicago	Summer 2022
Observing Earth from Space, Yale (1 lecture per year)	2020–2022
Earth, Resources, Energy and the Environment, Yale (1 lecture)	2019
The Process of Change in Science: Discovery of Global Warming, USC (1 lecture)	2018
Oceans and Atmospheres, UCLA (several lectures)	2015, 2016
Blue Planet: Introduction to Oceanography, UCLA (1 lecture)	2016
The Universe and Humanity: Origin and Destiny, Honors, U. Arizona (4 lectures)	2012

Advising and Mentoring

Yale Research Scientists:

J. Michael Battalio	2022–present

Yale Postdoctoral Advisees:

Seung Hun Baek (now researcher at LLNL)	2020–2023
William Rush (now assistant professor at Santa Clara University)	2022–2023
J. Michael Battalio (now research scientist at Yale)	2019–2022

Yale Graduate Students:

Caleb Keaveney	2023–present
Sooman Han	2022–present
Serena Yang	2022–present
Nicholas Lombardo	2019–present
Annika Margevich (minor discourse)	2021–present
Ashley Arroyo (minor discourse)	2020–present
Zhiyuan Li (minor discourse)	2019–present
Guillaume Delaviel (minor discourse)	2019–2021

Other Yale Doctoral Committees:

Paul Curtis	2021–present
Elizabeth Bailey	2020–present
Jingjun Liu	2020–present
Yu Liang	2019–present
Manpreet Singh	2019–present
Ulla Heede (PhD 2022)	2019–2022

External Graduate Students:

Jan Vatant d'Ollone (PhD 2020, Sorbonne Université; doctoral committee)	2020
Hung-I Lee (PhD 2019, UCLA; research collaborator and advisor)	2015–2019
Sean Faulk (PhD 2018, UCLA; research collaborator and advisor)	2014–2018

Yale Postgraduate Advisees:

Sofia Menemenlis (now graduate student at Princeton)	2020–2021

Yale Undergraduate Senior Theses Supervised:

Kunsang Dorjee (Physics)	2022
Nicholas Archambault (Physics)	2020–2021
Colin Baciocco (EPS)	2020–2021
Mary Yap (EPS)	2020–2021
Sofia Menemenlis (EPS)	2019–2020
Michael Machado (Physics)	2019

Other Undergraduate Research Advisees:

Alyse Olcott, Yale	2023–present
Ethan Olim, Yale	2022–present
Kunsang Dorjee, Yale	2019–2022
Juliana Surprenant, Yale	2020–2021
Nicholas Archambault, Yale	2019–2021
Chloe Whicker, UCLA	2017–2019
Alexandrea Arnold, UCLA	2016–2017
Shelley Cheng, UCLA	2016–2017
Raul Reyes, UCLA	2016–2017
Tyler Vollmer, UCLA	2015–2016

Professional Service

Editor: *Icarus* 2018–present

Referee:
Astrophysical Journal Letters, *Climate Dynamics*, *Climate of the Past*, *Geophysical Research Letters*, *Icarus*, *IOP eBooks*, *Journal of the Atmospheric Sciences*, *Journal of Climate*, *Journal of Geophysical Research: Atmospheres*, *Journal of Hydrometeorology*, *Nature Astronomy*, *Nature Communications*, *Nature Geoscience*, *Planetary Science Journal*, *Planetary and Space Science*, *Scientific Reports*

Proposal Reviewer:
Group Chief, Panelist, and External Reviewer for NASA Planetary Science Division
Reviewer for NSF Geosciences Directorate
Reviewer for Agence Nationale de la Recherche (French National Research Agency)
Reviewer for Deutsche Forschungsgemeinschaft (German Research Foundation)
Reviewer for Chilean National Research and Development Agency
Reviewer for UK Science and Technology Facilities Council

Service to Societies and Agencies:

Steering Committee Member, NASA Network for Ocean Worlds	2020–present
Member Representative for Yale University, University Corporation for Atmospheric Research (UCAR)	2019–present
Invited panelist, National Academies Workshop: *Identifying New Community-Driven Science Themes for NSF's Support of Paleoclimate Research*	2021

Conference Activities and External Committees:

Primary/Session Convener, *Atmospheric Rivers: Processes, Impacts, and Uncertainties* Session, AGU Fall Meeting	2022, 2023
Invited panelist, *Ice-Ocean Interactions on Icy Moons in the Solar System* Workshop, Princeton, NJ	2022
Outstanding Student Paper Award Judge, AGU Fall Meeting	2016
Co-chair, *Titan: Upper Atmosphere* Session, Joint DPS/EPSC Meeting	2016
Local Organizing Committee Member, *Exoplanets, Biosignatures and Instruments* Conference, Tucson, AZ	2013–2014
Curriculum Committee Member, Lunar and Planetary Laboratory	2011–2013
Co-chair, *Titan 3* Session, DPS Meeting	2013
Director Search Committee Member, Lunar and Planetary Laboratory	2011

University Service

University:

Yale College Postgraduate Fellowships Committee	2019–2021

Department:

Climate Search Committee	Fall 2022–Spring 2023
YCNCC Cluster Search EPS Committee	Spring 2022

	Program Review and Exam Committee	Fall 2019, 2022, Spring 2021, 2022
	Graduate Admissions and Recruiting Committee	2020–2021, Spring 2022
	Colloquium Committee	2019–2021
	Computer Facilities & Users Committee	2019–2020
	Roll-out of New Departmental Name Ad Hoc Committee	Spring 2020
	Berkeley College Adviser:	
	Kenny Tung	2022–2023
	Nava Minsky-Primus	2022–2023
	Kevin Zhou	2020–2021
	Jason Lee (2 semesters)	2020–2021
	Edward Seol (3 semesters)	2019–2020
	Samuel Tigistu (3 semesters)	2019–2020
Selected Outreach Activities	Project Co-lead and Member, *DIYnamics* Outreach Program (*diynamics.github.io*)	2016–present
	Workshop Co-Convener, Earth Educators' Rendezvous, *"Teaching atmosphere, ocean, and planetary fluid dynamic fundamentals vividly with rotating tanks"*	2022
	Lecturer, *"Weather across the Solar System"* Virtual Lecture, *Adventure in Science* Program	2021
	Presenter, *Climate Change Professional Development Virtual Workshop* for middle and high school teachers, U. Mass. Lowell	2020, 2021
	Panelist, *"Storms of the Solar System,"* NASA CCTP3 Livestream (∼20,000 views)	2018
	Guest, *"Moons and Exoplanets: The same or different species?"*, *AAS Afternoon Astronomy Coffee Hangout* Podcast	2018
	Featured Scientist, *Windfall Films* segment for TV Series on the Cosmos	2016
	Volunteer, *Exploring Your Universe*, UCLA	2014–2017
	Presenter, UCLA and Santa Monica College paleoclimate research workshops	2015–2016
	Presenter, UCLA iPLEX K-12 classroom visits and workshops	2014–2016
	Artist, DPS/EPSC Meeting Art Shows	2010–2012, 2016
	Artist/Volunteer, LPL Art of Planetary Science	2013–2015
	Organizing Committee Member, *Exploring Your Universe*, UCLA	2015
	Presenter, Telescope Nights, University of Arizona	2010–2012
Invited Colloquia and Seminars	Geophysical Sciences Seminar, University of Chicago	2023
	Atmosphere Ocean Science Colloquium, NYU Courant	2022
	Rossbypalooza, University of Chicago	2022
	Atmospheric Science Seminar, University of California, Davis	2022
	Geological Sciences Department Seminar, University of Alaska, Anchorage	2022
	Atmospheres and Oceans Seminar, Johns Hopkins University	2021
	Earth and Atmospheric Sciences Colloquium, Indiana University, Bloomington	2021
	Atmospheric Oceanic and Planetary Physics Seminar, University of Oxford	2021
	DEEPS Colloquium, Brown University	2021
	NASA Network for Ocean Worlds Lecture	2021
	DEEPS Colloquium, Brown University	2020
	Lamont-Doherty Earth Observatory Seminar, Columbia University	2020
	Earth and Planetary Sciences Department Seminar, University of California, Davis	2020
	Physical Oceanography Seminar, University of Rhode Island	2020
	Paleoclimate Seminar, Woods Hole Oceanographic Institution	2020
	Earth Section Seminar, Scripps Institution of Oceanography	2019

Origin and Evolution of Planet Earth Symposium, Yale University	2019
Departmental Seminar, Geological Sciences, Stanford University	2018
Earth/Planetary Science Special Seminar, California Institute of Technology	2018
Earth System Science Seminar, UC Irvine	2018
CLaSP Seminar, University of Michigan	2018
Department of Geology and Geophysics Colloquium, Yale University	2018
Department of Astronomy Colloquium, Cornell University	2018
Planetary Science Seminar, UCLA	2018
Whole Earth Seminar, Earth and Planetary Sciences, UCSC	2018
Atmospheric and Oceanic Sciences Department Seminar, UCLA	2017
Planetary Science Seminar, California Institute of Technology	2017
Atmospheric Oceanic and Planetary Physics Seminar, University of Oxford	2017
Physics Department Lecture, Westmont College	2016
Planetary Science Seminar, Jet Propulsion Laboratory	2016
Planetary Science Seminar, UCLA	2016
Laboratoire de Météorologie Dynamique Seminar, IPSL, Paris	2015
Planetary Seminar, Georgia Institute of Technology	2015
Planetary Science Seminar, UCLA	2014
Planetary Science Seminar, NASA Goddard Space Flight Center	2014

Invited Conference Talks

Lora, J.M. (2023). "The influence of orbital forcing on the distribution of Titan's surface liquids" (Plenary Talk). 54th Lunar and Planetary Science Conference.

Lora, J.M. (2022). "Understanding Titan's weather, climate, and paleoclimate." *Urey Prize Lecture* (Plenary Talk), 54th Division for Planetary Sciences Annual Meeting.

Lora, J.M., D.E. Ibarra, C.B. Skinner (2020). "Components and Mechanisms of the North American hydrologic cycle since the Last Glacial Maximum." American Geophysical Union Fall Meeting.

Lora, J.M., C.B. Skinner (2020). "Atmospheric river shifts in response to Holocene forcings and their impact on millennial-scale hydroclimate changes." American Geophysical Union Fall Meeting.

Lora, J.M. (2018). "The circulation and volatile cycles of Solar System atmospheres" (Invited Review). Comparative Climatology of Terrestrial Planets III, abstract #2030.

Lora, J.M. (2018). "Atmospheric rivers and the changing climate of western North America since the Last Glacial Maximum." 2018 International Atmospheric Rivers Conference.

Lora, J.M., J.L. Mitchell, C. Risi, and A.E. Tripati (2017). "North Pacific atmospheric rivers and their influence on North America since the Last Glacial Maximum." American Geophysical Union Fall Meeting, abstract #PP44C-06.

Lora, J.M. (2017). "The climate of Titan" (Invited Review). Titan Through Time 4.

Lora, J.M., J.L. Mitchell, C. Risi, and A.E. Tripati (2016). "Atmospheric moisture transport to western North America during the Last Glacial Maximum and deglaciation." Geological Society of America Annual Meeting, abstract #288614.

Refereed Publications

† *Yale advisee*

1. **Lora, J.M.**, C.B. Skinner, †W.D. Rush, and †S.H. Baek (2023). The hydrologic cycle and atmospheric rivers in CESM2 simulations of the Last Glacial Maximum. *Geophysical Research Letters*, accepted.
2. Lewis, N.T., †N.A. Lombardo, P.L. Read, and **J.M. Lora** (2023). Equatorial waves and superrotation in the stratosphere of a Titan general circulation model. *Planetary Science Journal* 4, 149. https://doi.org/10.3847/PSJ/ace76f
3. †Baek, S.H., Y. Kanzaki, **J.M. Lora**, N. Planavsky, C.T. Reinhard, and S. Zhang (2023). Impact of climate on the global capacity for enhanced rock weathering on croplands. *Earth's Future* 11, e2023EF003698. http://dx.doi.org/10.1029/2023EF003698
4. Birch, S.P.D., G. Parker, P. Corlies, J.M. Soderblom, J.W. Miller, R.V. Palermo, **J.M. Lora**, A.D. Ashton, A.G. Hayes, and J.T. Perron (2023). Reconstructing river flows remotely on Earth, Titan, and Mars. *Proceedings of the National Academy of Sciences* 120, e2206837120. https://doi.org/10.1073/pnas.2206837120
5. Shields, C.A., et al. (including **J.M. Lora**) (2023). Future atmospheric rivers and impacts on precipitation: Overview of the ARTMIP Tier 2 high-resolution global warming experiment. *Geophysical Research letters* 50, e2022GL102091. https://doi.org/10.1029/2022GL102091
6. †Baek, S.H., †J.M. Battalio, and **J.M. Lora** (2023). Atmospheric river variability over the last millennium driven by annular modes. *AGU Advances* 4, e2022AV000834. https://doi.org/10.1029/2022AV000834
7. Skinner, C.B., **J.M. Lora**, C. Tabor, J. Zhu (2023). Atmospheric river contributions to ice sheet hydroclimate at the Last Glacial Maximum. *Geophysical Research Letters* 50, e2022GL101750. https://doi.org/10.1029/2022GL101750
8. †Lombardo, N.A. and **J.M. Lora** (2023). Influence of observed seasonally varying composition on Titan's stratospheric circulation. *Icarus* 390, 115291. https://doi.org/10.1016/j.icarus.2022.115291
9. Lee, H.-I., J.L. Mitchell, **J.M. Lora**, and A. Tripati (2023). Influence of stationary waves on precipitation change in North American summer during the Last Glacial Maximum. *Journal of Climate* 36, 3165–3182. https://doi.org/10.1175/JCLI-D-21-0886.1
10. †Menemenlis, S., S.M. White, D.E. Ibarra, and **J.M. Lora** (2022). A proxy-model comparison for mid-Pliocene warm period hydroclimate in the Southwestern US. *Earth and Planetary Science Letters* 596, 117803. https://doi.org/10.1016/j.epsl.2022.117803
11. Lewis-Merrill, R.A., S. Moon, J.L. Mitchell, and **J.M. Lora** (2022). Assessing environmental factors of alluvial fan formation on Titan. *Planetary Science Journal* 3, 223. https://doi.org/10.3847/PSJ/ac8d09
12. **Lora, J.M.**, †J.M. Battalio, †M. Yap, and †C. Baciocco (2022). Topographic and orbital forcing of Titan's hydroclimate. *Icarus* 384, 115095. https://doi.org/10.1016/j.icarus.2022.115095
13. †Baek, S.H., Y. Kushnir, M. Ting, J.E. Smerdon, and **J.M. Lora** (2022). Regional signatures of forced North Atlantic SST variability: A limited role for aerosols and greenhouse gases. *Geophysical Research Letters* 49, e2022GL097794. https://doi.org/10.1029/2022GL097794
14. Marquardt Collow, A., C.A. Shields, B. Guan, S. Kim, **J.M. Lora**, and 15 co-authors (2022). An overview of ARTMIP's Tier 2 reanalysis intercomparison: Uncertainty in the detection of atmospheric rivers and their associated precipitation. *Journal of Geophysical Research: Atmospheres* 127, e2021JD036155. https://doi.org/10.1029/2021JD036155

15. Comola, F., J. Kok, **J.M. Lora**, K. Cohanim, X. Yu, C. He, P. McGuiggan, S. Hörst, and F. Turney (2022). Titan's prevailing circulation might drive highly intermittent, yet significant sediment transport. *Geophysical Research Letters* 49, e2022GL097913. https://doi.org/10.1029/2022GL097913

16. O'Brien, T.A., et al. (including **J.M. Lora**) (2022). Increases in future AR count and size: Overview of the ARTMIP Tier 2 CMIP5/6 experiment. *Journal of Geophysical Research: Atmospheres* 127, e2021JD036013. https://doi.org/10.1029/2021JD036013

17. Amaya, D.J., A.M. Seltzer, K.B. Karnauskas, **J.M. Lora**, X. Zhang, and P.N. DiNezio (2022). Air-sea coupling shapes North American hydroclimate response to ice sheets during the Last Glacial Maximum. *Earth and Planetary Science Letters* 578, 117271. https://doi.org/10.1016/j.epsl.2021.117271

18. Rafkin, S., **J.M. Lora**, A. Soto, and †J.M. Battalio (2022). The interaction of deep convection with the general circulation in Titan's atmosphere. Part 1: Cloud resolving simulations. *Icarus* 373, 114755. https://doi.org/10.1016/j.icarus.2021.114755

19. †Battalio, J.M., **J.M. Lora**, S. Rafkin, and A. Soto (2022). The interaction of deep convection with the general circulation in Titan's atmosphere. Part 2: Impacts on the climate. *Icarus* 373, 114623. https://doi.org/10.1016/j.icarus.2021.114623

20. Rodriguez, S., et al. (including **J.M. Lora**) (2022). Science goals and new mission concepts for a future exploration of Titan's atmosphere, geology and habitability: Titan POlar Scout/orbiteEr and In situ lake lander and DrONe explorer (POSEIDON). *Experimental Astronomy*. https://doi.org/10.1007/s10686-021-09815-8

21. †Baek, S.H., Y. Kushnir, W.A. Robinson, **J.M. Lora**, D.E. Lee, M. Ting (2021). An atmospheric bridge between subpolar and tropical Atlantic regions: A perplexing asymmetric teleconnection. *Geophysical Research Letters* 48, e2021GL096602. https://doi.org/10.1029/2021GL096602

22. †Baek, S.H. and **J.M. Lora** (2021). Counterbalancing influences of aerosols and greenhouse gases on atmospheric rivers. *Nature Climate Change* 11, 958–965. https://doi.org/10.1038/s41558-021-01166-8

23. †Battalio, J.M. and **J.M. Lora** (2021). Global impacts from high-latitude storms on Titan. *Geophysical Research Letters* 48, e2021GL094244. https://doi.org/10.1029/2021GL094244

24. †Battalio, J.M. and **J.M. Lora** (2021). Annular modes of variability in the atmospheres of Mars and Titan. *Nature Astronomy* 5, 1139–1147. https://doi.org/10.1038/s41550-021-01447-4

25. †Menemenlis, S.A., **J.M. Lora**, M. Lofverstrom, and D. Chandan (2021). Influence of stationary waves on mid-Pliocene atmospheric rivers and hydroclimate. *Global and Planetary Change* 204, 103557. https://doi.org/10.1016/j.gloplacha.2021.103557

26. Nichols-Fleming, F., P. Corlies, A.G. Hayes, M. Ádámkovics, P. Rojo, S. Rodriguez, E.P. Turtle, **J.M. Lora**, and J.M. Soderblom (2021). Tracking short-term variations in the haze distribution of Titan's atmosphere with SINFONI VLT. *Planetary Science Journal* 2, 180. https://doi.org/10.3847/PSJ/abffd7

27. Barnes, J.W., et al. (including **J.M. Lora**) (2021). Science goals and objectives for the Dragonfly Titan rotorcraft relocatable lander. *Planetary Science Journal* 2, 130. https://doi.org/10.3847/PSJ/abfdcf

28. MacKenzie, S.M., S.P.D. Birch, S. Hörst, C. Sotin, E. Barth, **J.M. Lora**, and 27 coauthors (2021). Titan: Earth-like on the outside, Ocean World on the inside. *Planetary Science Journal* 2, 112. https://doi.org/10.3847/PSJ/abf7c9

29. Kageyama, M., S.P. Harrison, M.-L. Kapsch, M. Lofverstrom, **J.M. Lora**, and 24 co-authors (2021). The PMIP4 Last Glacial Maximum experiments: preliminary results and comparison with the PMIP3 simulations. *Climate of the Past* 17, 1065–1089. https://doi.org/10.5194/cp-17-1065-2021

30. **Lora, J.M.**, C.A. Shields, and J.J. Rutz (2020). Consensus and disagreement in atmospheric river detection: ARTMIP global catalogues. *Geophysical Research Letters* 47, e2020GL089302. https://doi.org/10.1029/2020GL089302

31. Skinner, C.B., **J.M. Lora**, A.E. Payne, and C.J. Poulsen (2020). Atmospheric river changes shaped mid-latitude hydroclimate since the mid-Holocene. *Earth and Planetary Science Letters* 541, 116293. https://doi.org/10.1016/j.epsl.2020.116293

32. Rehfeld, K., R. Hébert, **J.M. Lora**, M. Lofverstrom, and C.M. Brierley (2020). Variability of surface climate in simulations of past and future. *Earth System Dynamics* 11, 447–468. https://doi.org/10.5194/esd-11-447-2020

33. O'Brien, T.A., et al. (including **J.M. Lora**) (2020). Detection uncertainty matters for understanding atmospheric rivers. *Bulletin of the American Meteorological Society* 101, E790–E796. https://doi.org/10.1175/BAMS-D-19-0348.1

34. Dixit, Y., S. Toucanne, C. Fontanier, V. Pasquier, **J.M. Lora**, G. Jouet, and A. Tripati (2020). Enhanced western Mediterranean rainfall during past interglacials driven by North Atlantic pressure changes. *Quaternary International* 553, 1–13. https://doi.org/10.1016/j.quaint.2020.08.017

35. Santi, L.M., A.J. Arnold, D.E. Ibarra, C.A. Whicker, J.A. Mering, R.B. Lomarda, **J.M. Lora**, and A. Tripati (2020). Clumped isotope constraints on changes in latest Pleistocene hydroclimate in the northwestern Great Basin: Lake Surprise, California. *GSA Bulletin* 132, 2669–2683. https://doi.org/10.1130/B35484.1

36. Faulk, S.P.*, **J.M. Lora***, J.L. Mitchell, and P.C.D. Milly (2020). Titan's climate patterns and surface methane distribution due to the coupling of land hydrology and atmosphere. *Nature Astronomy* 4, 390–398. https://doi.org/10.1038/s41550-019-0963-0
**equal-contribution authors*

37. Rutz, J.J., C.A. Shields, **J.M. Lora**, and 35 co-authors (2019). The Atmospheric River Tracking Method Intercomparison Project (ARTMIP): Quantifying uncertainties in atmospheric river climatology. *Journal of Geophysical Research: Atmospheres* 124, 13,777–13,802. https://doi.org/10.1029/2019JD030936

38. **Lora, J.M.** and D.E. Ibarra (2019). The North American hydrologic cycle through the last deglaciation. *Quaternary Science Reviews* 226, 105991 (Invited contribution). https://doi.org/10.1016/j.quascirev.2019.105991

39. Lee, H.-I., J.L. Mitchell, A. Tripati, **J.M. Lora**, G. Chen, and Q. Ding (2019). North Atlantic and Pacific quasi-stationary parts of atmospheric rivers and their implications for East Asian monsoon onset. *Geophysical Research Letters* 46, 12311–12320. https://doi.org/10.1029/2019GL084272

40. **Lora, J.M.**, T. Tokano, J. Vatant d'Ollone, S. Lebonnois, and R.D. Lorenz (2019). A model intercomparison of Titan's climate and low-latitude environment. *Icarus* 333, 113–126. https://doi.org/10.1016/j.icarus.2019.05.031

41. MacKenzie, S.M., **J.M. Lora**, and R.D. Lorenz (2019). A thermal inertia map of Titan. *Journal of Geophysical Research: Planets* 124, 1728–1742. https://doi.org/10.1029/2019JE005930

42. Molaro, J.L., M. Choukroun, C. Phillips, E. Phelps, R. Hodyss, K. Mitchell, **J.M. Lora**, and G. Meirion-Griffith (2019). The microstructural evolution of water ice in the solar system through sintering. *Journal of Geophysical Research: Planets* 124, 243–277. https://doi.org/10.1029/2018JE005773

43. Hill, S.A., **J.M. Lora**, N. Khoo, S.P. Faulk, and J. Aurnou (2018). Affordable rotating fluid demonstrations for geoscience education: The DIYnamics project. *Bulletin of the American Meteorological Society* 99, 2529–2538. https://doi.org/10.1175/BAMS-D-17-0215.1

44. **Lora, J.M.** (2018). Components and mechanisms of hydrologic cycle changes over North America at the Last Glacial Maximum. *Journal of Climate* 31, 7035–7051. https://doi.org/10.1175/JCLI-D-17-0544.1

45. Shields, C.A., J.J. Rutz, L.R. Leung, F.M. Ralph, M. Wehner, B. Kawzenuk, **J.M. Lora**, and 32 co-authors (2018). Atmospheric River Tracking Method Intercomparison Project (ARTMIP): Experimental design and project goals. *Geoscientific Model Development* 11, 2455–2474. https://doi.org/10.5194/gmd-2017-295

46. Turtle, E.P., J.E. Perry, J.M. Barbara, A.D. Del Genio, S. Rodriguez, C. Sotin, **J.M. Lora**, S. Faulk, P. Corlies, J. Kelland, S.M. MacKenzie, R.A. West, A.S. McEwen, J.I. Lunine, J. Pitesky, T.L. Ray, and M. Roy (2018). Titan's meteorology over the Cassini mission: Evidence for extensive subsurface methane reservoirs. *Geophysical Research Letters* 45, 5320–5328. https://doi.org/10.1029/2018GL078170

47. **Lora, J.M.**, T. Kataria, and P. Gao (2018). Atmospheric circulation, chemistry, and infrared spectra of Titan-like exoplanets around different stellar types. *Astrophysical Journal* 853, 58–67. https://doi.org/10.3847/1538-4357/aaa132

48. Faulk, S.P., S. Moon, J.L. Mitchell, and **J.M. Lora** (2017). Regional patterns of extreme precipitation on Titan consistent with observed alluvial fan distribution. *Nature Geoscience* 10, 827–831. https://doi.org/10.1038/ngeo3043

49. Löfverström, M. and **J.M. Lora** (2017). Abrupt regime shifts in the North Atlantic atmospheric circulation over the last deglaciation. *Geophysical Research Letters* 44, 8047–8055. https://doi.org/10.1002/2017GL074274

50. **Lora, J.M.**, J.L. Mitchell, C. Risi, and A.E. Tripati (2017). North Pacific atmospheric rivers and their influence on North America at the Last Glacial Maximum. *Geophysical Research Letters* 44, 1051–1059. https://doi.org/10.1002/2016GL071541

51. **Lora, J.M.** and M. Ádámkovics (2017). The near-surface methane humidity on Titan. *Icarus* 286, 270–279. https://doi.org/10.1016/j.icarus.2016.10.012

52. **Lora, J.M.**, J.L. Mitchell, and A.E. Tripati (2016). Abrupt reorganization of North Pacific and western North American climate during the last deglaciation. *Geophysical Research Letters* 43, 11796–11804. https://doi.org/10.1002/2016GL071244

53. Mitchell, J.L. and **J.M. Lora** (2016). The climate of Titan. *Annual Reviews of Earth and Planetary Science* 44, 353–380. https://doi.org/10.1146/annurev-earth-060115-012428 (Invited contribution)

54. McDonald, G.D., A.G. Hayes, R.C. Ewing, **J.M. Lora**, C.E. Newman, T. Tokano, A. Lucas, A. Soto, and G. Chen (2016). Variations in Titan's dune orientations as a result of orbital forcing. *Icarus* 270, 197–210. https://doi.org/10.1016/j.icarus.2015.11.036

55. Neish, C.D., J.L. Molaro., **J.M. Lora**, A.D. Howard, R.L. Kirk, P. Schenk, V.J. Bray, and R.D. Lorenz (2016). Fluvial erosion as a mechanism for crater modification on Titan. *Icarus* 270, 114–129. https://doi.org/10.1016/j.icarus.2015.07.022

56. **Lora, J.M.** and J.L. Mitchell (2015). Titan's asymmetric lake distribution mediated by methane transport due to atmospheric eddies. *Geophysical Research Letters* 42, 6213–6220. https://doi.org/10.1002/2015GL064912

57. **Lora, J.M.**, J.I. Lunine, and J.L. Russell (2015). GCM simulations of Titan's middle and lower atmosphere and comparison to observations. *Icarus* 250, 516–528. https://doi.org/10.1016/j.icarus.2014.12.030

58. **Lora, J.M.**, J.I. Lunine, J.L. Russell, and A.G. Hayes (2014). Simulations of Titan's paleoclimate. *Icarus* 243, 264–273. https://doi.org/10.1016/j.icarus.2014.08.042

59. Griffith, C.A., **J.M. Lora**, J. Turner, P.F. Penteado, R.H. Brown, M.G. Tomasko, L. Doose, and C. See (2012). Possible tropical lakes on Titan from observations of dark terrain. *Nature* 486, 237–239. https://doi.org/10.1038/nature11165

60. **Lora, J.M.**, P.J. Goodman, J.L. Russell, and J.I. Lunine (2011). Insolation in Titan's troposphere. *Icarus* 216, 116–119. https://doi.org/10.1016/j.icarus.2011.08.017

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