

Brian Medeiros

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Summary

More than 15 years of experience at NCAR as a Project Scientist (now “Scientist VI”). Specializes in Earth System Model evaluation and benchmarking, including comparison with satellite observations, with focus on the role of clouds in the climate system. Key contributions in development of novel diagnostic methods, diagnostic suites, and CESM development. Has supervised scientific and technical staff at all levels and mentored undergraduate and graduate students, post-doctoral fellows, and early-career scientists. Has acted as Principal Investigator and co-Investigator on funded projects from DOE, NASA, NSF, and NOAA. Author and co-author on > 70 peer-reviewed publications (h-index > 35).

Education

Ph.D. Atmospheric & Oceanic Sciences, UCLA, 2007
Dissertation: Cloud-climate interactions in general circulation models.
Advisor: Bjorn Stevens

M.Sc. Atmospheric Sciences, UCLA, 2003

B.A. Physics, UC Berkeley, 2000

Professional Experience

PROJECT SCIENTIST III→SCIENTIST VI 2021–present, NCAR CGD

PROJECT SCIENTIST II 2015–2021, NCAR CGD

PROJECT SCIENTIST I 2009–2015, NCAR CGD

Postdoctoral Researcher 2007–2009, UCLA AOS,
visitor to Colorado State University, Dept. of Atmospheric Science, Center for Multiscale Modeling of
Atmospheric Processes (CMMAP, host: David Randall)

Graduate Student Researcher 2002–2007, UCLA AOS

Lab Assistant 1999–2001, Physics Department, UC Berkeley

Mentoring & Supervision

Post-doc mentoring Margaret Duffy; Priyam Raghuraman; Osamu Miyawaki

Mentor UCAR Mentoring Program, 2021-22.

Graduate Student Host Qinqin Kong, Purdue U., Spring 2023; Max Bouman, Wageningen, Spring 2023; Funing Li, Purdue, Summer 2021 (virtual); George Papavasileiou, KIT, Spring 2019; Eleanor Middlemas, RSMAS, U Miami, Summer 2016; Felix Pithan, MPI-M, Hamburg. Summer 2013.

SOARS Research Mentor 2020, 2019, 2017, 2016, 2014 SOARS, UCAR.

LEAP Summer Program Mentor 2024 (2 undergrad, 1 grad)

Supervisor

current: Project Scientist / Scientist V (3),

previous: Software Engineer (1), Associate Scientist (2), Post-doctoral Fellow (1)

Thesis Committees

Dissertation Committee Isaac Davis, U. Colorado (*current*); Tyler Tatro, RSMAS, U. Miami (*current*); Qinqin Kong, Purdue U. (2024); Funing Li, Purdue U. (2023); Eleanor Middlemas, RSMAS, U. Miami (2018); William Frey, U. Colorado (2018)

Masters Thesis Reader Arianna Varuolo-Clarke, Stony Brook (2018) University.

Research Grants

[selected] co-PI Improved understanding of cloud controlling factors, 1/2025 – 12/2027 (*recommended for funding*), NOAA, Climate Program Office, Modeling, Analysis, Prediction, and Projections (MAPP) Program.

[current] PI LEAP: Physics-Implementation Experience With CESM (PIECES) 5/2024 – 5/2026 (*approx.*) Year 3 Research Project, NSF LEAP ([internal](#)).

[current] co-I Collaborative Research: Enabling Cloud-Permitting and Coupled Climate Modeling via Nonhydrostatic Extensions of the CESM Spectral Element, 2/2024 – 1/2027, National Science Foundation, NSF FAIN: 2332468.

[current] co-PI Sustainability: Atmospheric Physics Needs for Community Climate Modeling, 9/2023 – 8/2025, National Science Foundation, award number 2311376.

[current] co-I Collaborative Research: Frameworks: Community-Based Weather and Climate Simulation With a Global Storm-Resolving Model, Colorado State University, National Science Foundation. 2020-2025, FAIN: 2004973

[current] co-PI Collaborative Research: EarthCube Capabilities: Raijin: Community Geoscience Analysis Tools for Unstructured Mesh Data, NSF EarthCube, NSF FAIN: 2126458, 2021-2024

[complete] co-PI WCRP Digital Earths Global Hackathon, NSF AGS, NSF FAIN: 1755088, 2025

[complete] Research Objective Lead (co-I) Cooperative Agreement To Analyze variability, change and predictability in the earth System (CATALYST), 2021 – Jul 2024 (extended into 2025), Dept. of Energy.

[complete] co-PI A High-Top Global Circulation Model for Mars, NASA, 2022–2024

[complete] PI Constraining and Understanding Climate Sensitivity with Process Oriented Diagnostics, NOAA MAPP, 2020-2023

[complete] co-I Collaborative Research: A Flexible Framework for Radiation Parameterizations Traceable to Benchmarks, 2020-2023, Columbia University, National Science Foundation. NSF FAIN: 1916908

[complete] co-I Quantifying the link between organized convection and extreme precipitation, 2019–2023, Stony Brook University, NASA PMM. NASA Grant number 80NSSC19K0717 P00001.

[complete] Cooperative Agreement To Analyze variability, change and predictability in the earth System (CATALYST), Jul 2018 – Jul 2021, Dept. of Energy.

- [complete]** co-PI Extending the atmospheric model hierarchy within CESM, 2019–2020, NSF award 000057-00414.
- [complete]** co-I Cloud-Feedback Model Intercomparison Project: Tier 2 Simulations, 2019–2020, DOE/LLNL, subcontract to University of Miami.
- [complete]** PI, Tropical-Extratropical Interactions in a Hierarchy of Model Complexity, 15 May 2017 – 30 April 2020, University of Miami/National Science Foundation. NSF FAIN: 1650209
- [complete]** PI, Evaluation of and Improvements to Components of Climate System Models, January 2013–December 2017, Department of Energy. DE-FC02-97ER62402
- [complete]** PI, RAPID: Developing a Community Aquaplanet Model, 8/1/15 - 7/31/16, University of Miami/National Science Foundation. NSF FAIN: 1547910

Academic Service

Committees & Working Groups

- Member** CMIP7 Model Benchmarking Task Team (2022–present)
- Member** CGD Communications Committee (4/2024–present)
- Representative** NCAR Advanced Study Program Postdoctoral Fellow Search Committee (10/2022–6/2024)
- Organizing Group** President’s Strategic Initiative Fund ”UCAR Remote Sensing Initiative” (6/2022–2024)
- Steering Committee** Community Climate Intervention Strategies Project (2019–present).
- Element Lead** Model Hierarchies, CGD Implementation Plan (2020–2024)
- Element Lead** Analysis Tools and Workflows, CGD Implementation Plan (2023–2024)
- Facilitator** AMP Parameterized Processes Group, 2020–21.
- NOAA MAPP co-Lead** Task Force on Climate Sensitivity (2020–2023)
- US CLIVAR** Upper-ocean heat budget synthesis for the eastern equatorial Pacific and Atlantic Oceans (2012–2015) <http://www.usclivar.org/working-groups/etos>
- CMMAP** Education & Diversity Oversight Committee (2008/9)
- UCLA AOS** computer committee (2003-2007), UCLA AOS web committee (2003-2007)

Organizing & Convening

- Organizer** NCAR Node for WCRP Global KM-scale Hackathon, 12-16 May 2025.
- Organizer** 2020 CFMIP Meeting on Clouds, Precipitation, Circulation, and Climate Sensitivity, 14 - 17 September 2020, Virtual, hosted by NCAR.
- Organizer** Community Climate Intervention Strategies Workshop & Webinar Series.
- Organizer** 2018 CFMIP Meeting on Clouds, Precipitation, Circulation, and Climate Sensitivity, 16-19 October 2018, Boulder, Colorado, USA.
- Co-Convener** Toward Reducing Systematic Errors in Weather and Climate Models: Evaluation, Understanding, and Improvement, AGU Fall Meeting 2016 (Sessions A43G, A52D, A53K).
- Co-Convener** Leveraging Model Hierarchies to Understand the Climate System, AGU Fall Meeting 2016 (Session A11F).
- Co-Convener** Toward Reducing Systematic Errors in Weather and Climate Models: Evaluation, Understanding, and Improvement, AGU Fall Meeting 2015 (Sessions A21E, A23O).

Co-Convener Convection across Scales: Aggregation, Organization, and Stochasticity, AGU Fall Meeting 2015 (Sessions A51F, A53E).

Organizer NOAA/DOE Workshop on High-Resolution Coupling and Initialization to Improve Predictability and Predictions in Climate Models, 30 September – 2 October 2015, NCWCP Conference Center, College Park, Maryland.

Co-Convener Toward Reducing Systematic Errors in Weather and Climate Models: Evaluation, Understanding, and Improvement, AGU Fall Meeting 2014.

Organizer NCAR CGD seminar series, 2014-5 (backup 2013-4).

Coordinator NCAR AMP weekly meeting, 2012–present.

Organizer UCLA AOS Student Seminar Series, Summer 2005.

Organizer UCLA AOS Climate Dynamics Seminar (AOS 272), Fall 2003.

Associate Editor Journal of Climate (July 2017 – present)

Reviewer Atmosphere, Atmos. Chem. & Phys., Atmos. Sci. Lett., Bull. Amer. Meteor. Soc., Boundary Layer Meteorology, Clim. Dyn., Dutch Research Council (nwo.nl), Geosci. Mdl. Dev., Geophys. Res. Lett., J. Advances in Modeling Earth Systems, J. Appl. Meteorol., J. Atmos. Sci., J. Climate, J. Geophys. Res., J. Meteor. Soc. Japan, Meteor. & Atm. Phys., Mon. Weather Rev., Science, Science China Earth Sciences, Tellus, Quart. J. Roy. Meteor. Soc., Eos, JAMSTEC, European Commission, Department of Energy, Department of Interior, National Science Foundation, National Science Centre (Poland), NASA, NERC (UK), NCAR (internal).

Professional Societies American Meteorological Society (member), American Geophysical Union (member), Cloud Appreciation Society (member), Chi Epsilon Pi (AOS Student Organization; Webmaster, 2003-7, President, 2001-2), European Geophysical Union (former member), Sigma Xi (member)

Invited Presentations

Toward global kilometer-scale simulations with CESM: Progress and Challenges, Ocean and Climate Physics Seminar, Lamont-Doherty Earth Observatory, Columbia Climate School, 12 Decemebr 2025.

Parameter sensitivity with hybrid microphysics in CAM, Joint Aggregates & CISL workshop on cloud microphysics and machine learning, NCAR Mesa Laboratory, 2 September 2025.

Cloud-radiative feedbacks on convection and precipitation in conventional global atmosphere models, Workshop on Understanding Cloud-Radiative Feedback at Convective Scales in the Tropics, NCAR Foothills Laboratory, 21-24 July 2025.

Hops, skips, and jumps: Development activities around CAM7, 2024 Fall Lectures in Climate Data Science, NSF LEAP, 19 September 2024 (virtual).

Aquaplanets, Silver Lining Marine Cloud Brightening Program, 17 July 2024 (virtual).

Climate Sensitivity, as part of panel discussion: How much global warming will we see this century? CIRES Center for Social and Environmental Futures, University of Colorado, 30 April 2024.

Looking for answers in the clouds: Assessing clouds in CESM2 to understand its high climate sensitivity, Cclimate, Ocean and Sea Ice Modeling (COSIM), Los Alamos National Laboratory, 13 March 2024, (virtual).

The stratocumulus-to-cumulus transition in the subtropics, ASP Summer Colloquium, July 2023, Boulder, Colorado.

The Impact of increasing vertical resolution in the atmospheric boundary layer, CESM Workshop, Cross Working Group Session: Understanding Climate at the Intersection of CESM Components, June 2023, Boulder, Colorado.

Bigger. Better? Challenges of Evaluating High Resolution Climate Models, EarthWorks/NSF Workshop on Future Storm-Resolving Configurations of Community Earth System Model (CESM), May 2023, Fort Collins, Colorado.

Smoke and mirrors: how clouds influence climate in CESM2, distinguished lecturer series at Center for Ocean-Land-Atmosphere Studies (COLA) and the Department of Atmospheric, Oceanic, and Earth Sciences (AOES) at George Mason University, 10 April 2019.

Understanding Global Impacts Of Regional Aerosol Emissions Using Idealized Experiments, 2018 AGU Fall Meeting, abstract A44D-02.

The role of shallow cumulus in the climate system, and asking how bad is "good enough" for climate models. Colorado State University, Atmospheric Sciences Department Colloquium, 21 October 2016, Fort Collins, CO.

How much do cloud errors matter in coupled modelling? ECMWF Annual Seminar, 5–8 September 2016, Reading, UK.

Bringing climate models and observations together using a weather forecast approach: Scenes from the tropical Pacific, Joint CGD/EOL Seminar, May 2014.

Boundary layer structure in the subtropical stratocumulus decks of the Community Atmosphere Model, 2012 AGU Fall Meeting, abstract A54E-02.

Southeast Pacific stratocumulus in two versions of the Community Atmosphere Model, Max-Planck-Institut für Meteorologie, ZMAW / Klimacampus Seminar, 24 October 2012, Hamburg, Germany.

Idealized climate change experiments from the CMIP5 archive, Max-Planck-Institut für Meteorologie, The Atmosphere in the Earth System, Large-scale Dynamics Seminar, 22 October 2012, Hamburg, Germany.

Evaluating CAM's clouds with satellite simulators, NASA Sounder Science Meeting, Greenbelt, MD, November 2011.

East Pacific Low Clouds in CAPT Simulations using CAM4 and CAM5, Meeting of the CPT on Stratocumulus to Cumulus Transition, Boulder, CO, October 2011.

On the new CESM boundary layer: physics interactions & the subtropical south Atlantic. Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical Atlantic, Miami, FL, USA, March 2011.

Insidious little clouds: Shallow cumulus in climate models. NCAR CGD Seminar, August, 2009.

Ordinary clouds and their extraordinary impacts. CMMAP 7th Team Meeting, Fort Collins, CO, July, 2009.

The Little Clouds That Could
Mesoscale & Microscale Meteorology (MMM) Seminar, NCAR, Boulder, CO, April 2009.

Big Trouble with Little Clouds.
Rosenstiel School for Marine and Atmospheric Sciences, U. Miami, Florida, November 2008.
Max Plank Institut für Meteorologie, Hamburg, Germany, October 2008.
Eidgenössische Technische Hochschule (ETH) Zürich, Switzerland, October 2008.
Jet Propulsion Laboratory, NASA/Caltech, Pasadena, California, October 2008.

Cloud-Climate interactions in GCMs: An aquaplanet perspective. 4th Pan-GCSS Meeting on Advances in Modeling and Observing Clouds and Convection, Toulouse, France, June 2008.

Can aquaplanets predict a GCM's climate sensitivity? Colorado State University, Dept. of Atmos. Sci., October 2007.

Awards & Fellowships

Editors' Citation for Excellence in Refereeing for J. of Advances in Modeling Earth Systems (JAMES), 2015. [[eos](#)]

Brian Bosart Memorial Award for outstanding service contribution by a graduate student. UCLA AOS, Fall 2006.

Edwin W. Pauley Fellowship UCLA, 2001-2002, 2003-2004.

Teaching

UCLA AOS

Teaching Assistant, "Air Pollution," AS 2, Fall 2002.

Tutorial organizer & instructor, "A crash course in unix," September 2006.

UC Berkeley, Dept. of Physics

Teaching Assistant, "Thermodynamics, Electricity & Magnetism," Phys. 7B, Fall 2000.

Teaching Assistant, "Basic Semiconductor Circuits Lab," Phys. 111, Spring 2001.

UC Berkeley Extension

Teaching Assistant, "Introduction to Astronomy," Fall 2000.

Publications

Total Indexed Publications: 81 | **h-index:** 36 (Web of Science), 40 ([Google Scholar](#))

88. Zhang, Gan, Megha Rao, Isla Simpson, Kevin A. Reed, Brian Medeiros, Hsing-Hung Chou, and Tiffany Shaw: Near-surface Extreme Wind Events and Their Responses to Climate Forcings in a Hierarchy of Global Climate Models *J. Climate*, *submitted*.
87. Li, Funing, Daniel R. Chavas, Qin Jiang, Kristen L. Rasmussen, Brian Medeiros, and Kevin A. Reed: Competing Geographic Controls on Low-Level Jets and Regional Precipitation in North and South America *Geophys. Res. Lett.*, *in revision*
86. Zhu, Qindan, Arlene M. Fiore, Robert Pincus, Jian Guan, Clare E. Singer, Brian Medeiros, and Paolo Giani, 2026: Weak OH Response to Idealized ENSO, *Geophys. Res. Lett.*, *submitted 2/2026*
85. Varuolo-Clarke, Arianna M., Jennifer E. Kay, Brian Medeiros, Kirsten J. Mayer, Nathan Lenssen: Internal variability can overwhelm the forced precipitation response pattern over western North America, *Geophys. Res. Lett.*, *in revision* (2025GL120108)
84. Hoffman, F., Hassler, B., Swaminathan, R. Lewis, J., and 37 others: Rapid Evaluation Framework for the CMIP7 Assessment Fast Track, *Geophys. Model Dev.*, *revised*
83. Huang, X. and B. Medeiros, 2026: Heavy precipitation simulation in non-hydrostatic CESM modeling over the Western US, *Atmospheric Research*, *in press* [10.1016/j.atmosres.2026.109058](https://doi.org/10.1016/j.atmosres.2026.109058)
82. Raghuraman, S. P. and B. Medeiros, 2026: Cloud feedback overestimated in coupled CESM2 simulations relative to AMIP simulations and satellite observations: Importance of the pattern effect and implications for climate sensitivity *Env. Res. Lett.*, *in press*. [10.1088/1748-9326/ae5fab](https://doi.org/10.1088/1748-9326/ae5fab)
81. Gettelman, Andrew, Pier Luigi Vidale, Bjorn Stevens, Florian Ziemann, Zhe Feng, Heike Konow, Tobias Kölling, Lukas Kluft, William Jones, Sara Pasqualetto, Yuting Wu, Saskia Brose, John Clyne, Lluís Fita, Samuel Green, Lucas Harris, Melissa Anne Hart, Julia Kukulies, Brian Medeiros, Timothy M. Merlis, Mark Muetzelfeldt, Robert Pincus, Rosmeri P. da Rocha, Masaki Satoh, Hang Su, Daisuke Takasuka, Chris Terai, Paul Ullrich, Tianjun Zhou: Hacking Km-Scale Models: A Participative Model for Climate Information, *Bull. Amer. Meteor. Soc.*, (BAMS-D-25-0183). [10.1175/BAMS-D-25-0183.1](https://doi.org/10.1175/BAMS-D-25-0183.1)
80. Beadling, R. L., and Coauthors, 2026: Observational Data for Next Generation Climate Model Evaluation: Requirements, Considerations, and Best Practices. *Bull. Amer. Meteor. Soc.*, BAMS-D-25-0079.1. [10.1175/BAMS-D-25-0079.1](https://doi.org/10.1175/BAMS-D-25-0079.1)
79. Zhu, Q., Neumann, N., Fiore, A. M., Pincus, R., Guan, J., Milly, G., et al., 2026: Uncertain natural emissions dampen the increase in tropospheric hydroxyl radical (OH) with idealized surface warming. *Journal of Advances in Modeling Earth Systems*, 18, e2025MS005248. [10.1029/2025MS005248](https://doi.org/10.1029/2025MS005248) [[MIT News](#)]
78. Hassler, Birgit, Forrest M. Hoffman, Rebecca L. Beadling, Edward W. Blockley, Bo Huang, Jiwoo Lee, Valerio Lembo, Jared Lewis, Jianhua Lu, Luke E. Madaus, Elizaveta Malinina, Brian Medeiros, Wilfried M. Pokam, Enrico Scoccimarro, Ranjini Swaminathan: Systematic Benchmarking of Climate Models: Methodologies, Applications, and New Directions, *Rev. Geophys.*, *accepted*, [2025RG000891](https://doi.org/10.22541/essoar.174196646.65056548/v1). ESS preprint: [10.22541/essoar.174196646.65056548/v1](https://doi.org/10.22541/essoar.174196646.65056548/v1)
77. Duffy, M. L., I. R. Simpson, B. Medeiros, J. Zhu, C. S. McCluskey, A. Herrington, A. Gettelman, B. L. Otto-Bliesner, J. T. Fasullo, P. H. Lauritzen, R. Neale, D. M. Lawrence, 2026: Is the high ECS in CESM2 degrading transient climate change projections over the 21st century? *J. Adv. Model. Earth Syst.*, 18(1):e2025MS004967. [10.1029/2025MS004967](https://doi.org/10.1029/2025MS004967)

76. Clow, G. L., N. S. Lovenduski, M. N. Levy, K. Lindsay, J. E. Kay, I. Davis, B. Medeiros, Simulating satellite observations of sea surface temperature and chlorophyll in CESM2 to assess model and sampling bias, *JAMES*, 17, e2024MS004908. [10.1029/2024MS004908](https://doi.org/10.1029/2024MS004908) (November 2025)
75. Chadwick, R., P. Good, J. L. Garcia-Franco, L. Muniz Alves, N. Hart, M. T. Zilli, H. Douville, M. Saint-Lu, B. Medeiros Processes controlling the South American monsoon response to climate change, *J. Climate* [10.1175/JCLI-D-25-0012.1](https://doi.org/10.1175/JCLI-D-25-0012.1) (December 2025)
74. Rios-Berrios, R., K. Emanuel, G. H. Bryan, B. Medeiros, J. Done, 2025: Response of Tropical Climate and Extreme Precipitation to Ocean Temperature in Convection-Permitting Aquaplanet Simulations, *J. Adv. Model. Earth Syst.* [10.1029/2025MS005119](https://doi.org/10.1029/2025MS005119)
73. Simpson, I. R., R. R. Garcia, J. T. Bacmeister, P. H. Lauritzen, C. Hannay, B. Medeiros, J. Caron, G. Danabasoglu, A. Herrington, C. Jablonowski, D. Marsh, R. B. Neale, L. M. Polvani, J. H. Richter, N. Rosenbloom, S. Tilmes: The path toward vertical grid options for the Community Atmosphere Model version 7: the impact of vertical resolution on the QBO and tropical waves, *J. Adv. Model. Earth Syst.*, accepted [10.1029/2025MS004957](https://doi.org/10.1029/2025MS004957)
72. Reed, K. A., B. Medeiros, C. Jablonowski, I. R. Simpson, A. Voigt, A. A. Wing, 2025: Why Idealized Models are More Important Than Ever in Earth System Science, *AGU Advances*. [10.1029/2025AV001716](https://doi.org/10.1029/2025AV001716). [Eos highlight]
71. Salazar, A. M., B. Medeiros, J. Zhu, and E. Tziperman, 2025: Investigating the effects of a subtropical stratocumulus cloud break-up in warm climates using cloud-locking experiments, *J. Climate*. [10.1175/JCLI-D-24-0371.1](https://doi.org/10.1175/JCLI-D-24-0371.1)
70. Mauritsen, T. and 56 others, 2025: Earth's energy imbalance more than doubled in recent decades *AGU Advances*, 6, e2024AV001636, [10.1029/2024AV001636](https://doi.org/10.1029/2024AV001636).
69. Wall, C. J., D. Paynter, Y. Qin, M. Debolskiy, M. L. Duffy, T. Michibata, B. Duran, N. J. Lutsko, P.-L. Ma, B. Medeiros, T. Storelmo, M. Zhao, 2025: Decomposing Cloud-Radiative Feedbacks by Cloud-Top Phase, *J. Climate*. [10.1175/JCLI-D-24-0538](https://doi.org/10.1175/JCLI-D-24-0538)
68. Duran, B. M., C. J. Wall, N. J. Lutsko, T. Michibata, P.-L. Ma, Y. Qin, M. L. Duffy, B. Medeiros, M. Debolskiy, 2025: A new method for diagnosing effective radiative forcing from aerosol-cloud interactions in climate models, *Atmos. Phys. & Chem.* 25(4), pp 2123–2146. [10.5194/acp-25-2123-2025](https://doi.org/10.5194/acp-25-2123-2025)
67. Huang, X., A. Gettelman, B. Medeiros, W. C. Skamarock, 2024: Examining tropical convection features at storm-resolving scales over the Maritime Continent region, *J. Geophys. Res. – Atmospheres* 129(20), e2024JD040976. [10.1029/2024JD040976](https://doi.org/10.1029/2024JD040976)
66. Li, F., D. Chavas, B. Medeiros, K. A. Reed, K. Rasmussen, 2024: Upstream surface roughness and terrain are a strong driver of contrast in tornado potential between North and South America, *P. Natl. Acad. Sci.*, 121(26), [10.1073/pnas.2315425121](https://doi.org/10.1073/pnas.2315425121)
65. Raghuraman, S. P., B. Medeiros, A. Gettelman, 2024: Observational quantification of tropical high cloud changes and feedbacks, *J. Geophys. Res. – Atmospheres*, 129, e2023JD039364. [10.1029/2023JD039364](https://doi.org/10.1029/2023JD039364)
64. Harrop, B.E., J. Lu, L. R. Leung, W. K. M. Lau, K.-M. Kim, B. Medeiros, B. J. Soden, G. A. Vecchi, B. Zhang, and B. Singh, 2024: An overview of cloud-radiation denial experiments for the Energy Exascale Earth System Model version 1, *Geophys. Model Dev.*, 17, 3111–3135. [10.5194/gmd-17-3111-2024](https://doi.org/10.5194/gmd-17-3111-2024)
63. Davis, I., B. Medeiros, 2024: Assessing CESM2 cloud response to climate change using cloud regimes, *J. Climate* 37(10), 2965–2985. [10.1175/JCLI-D-23-0337.1](https://doi.org/10.1175/JCLI-D-23-0337.1)
62. Duffy, M. L., B. Medeiros, A. Gettelman, T. Eidhammer, 2024: Perturbing parameters to understand cloud contributions to climate change, *J. Climate*, 37, 213–227. [10.1175/JCLI-D-23-0250.1](https://doi.org/10.1175/JCLI-D-23-0250.1)

61. Schmidt, Gavin, T. Andrews, S. E. Bauer, P. J. Durack, N. Loeb, V. Ramaswamy, N. P. Arnold, M. G. Bosilovich, J. Cole, L. W. Horowitz, G. C. Johnson, J. M. Lyman, B. Medeiros, T. Michibata, D. Olonscheck, D. Paynter, S. P. Raghuraman, M. Schulz, D. Takasuka, V. Tallapragada, P. C. Taylor, and T. Ziehn, 2023: CERESMIP: A climate modeling protocol to investigate recent trends in the Earth's Energy Imbalance, *Frontiers in Climate*, 5:1202161, [10.3389/fclim.2023.1202161](https://doi.org/10.3389/fclim.2023.1202161).
60. Medeiros, B., J. Shaw, J. E. Kay, I. Davis, 2023: Assessing clouds using satellite observations through three generations of global atmosphere models, *Earth and Space Science*, 10, e2023EA002918, [10.1029/2023EA002918](https://doi.org/10.1029/2023EA002918).
59. Douville, H., R. Chadwick, M. Saint-Lu, B. Medeiros, 2023: Drivers of dry day sensitivity to increased CO₂, *Geophys. Res. Lett.*, *accepted*. [10.1029/2023GL103200](https://doi.org/10.1029/2023GL103200)
58. Reed, K., A. Stansfield, W.-C. Hsu, G. Kooperman, A. Akinsanola, W. Hannah, A. Pendergrass, B. Medeiros, 2023: Evaluating the simulation of CONUS precipitation by storm type in next-generation configurations of E3SM, *Geophys. Res. Lett.*, e2022GL102409. [10.1029/2022GL102409](https://doi.org/10.1029/2022GL102409)
57. Rios-Berrios, R., F. Judt, G. Bryan, B. Medeiros, W. Wang, 2023: Three-Dimensional Structure of Convectively Coupled Equatorial Waves in Aquaplanet Experiments with Resolved or Parameterized Convection, *J. Climate*, 36, 2895–2915, [10.1175/JCLI-D-22-0422.1](https://doi.org/10.1175/JCLI-D-22-0422.1)
56. Schlund, M., B. Hassler, A. Lauer, B. Andela, P. Jöckel, R. Kazeroni, S. Loosveldt Tomas, B. Medeiros, V. Predoi, S. Sényi, J. Servonnat, T. Stacke, J. Vegas-Regidor, K. Zimmermann, and V. Eyring, 2022: Evaluation of native earth system model output with ESMValTool v2.6.0, *Geoscientific Model Development Discussions*, 1-28, [10.5194/gmd-2022-205](https://doi.org/10.5194/gmd-2022-205).
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