

Brian Medeiros

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Summary

15 years of experience at NCAR as a Project Scientist. 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 > 60 peer-reviewed publications (h-index > 30).

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 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.

Supervisor Software Engineer (1), Associate Scientist (2), Project Scientist (3 current), Post-doctoral Fellow (1 current)

Thesis Committees

Dissertation Committee Qinqin Kong, Purdue U.; Funing Li, Purdue U.; Eleanor Middlemas, RSMAS, U. Miami (2018); William Frey, U. Colorado (2018)

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

Research Grants

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

[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

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

[current] 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–present)
- Element Lead** Analysis Tools and Workflows, CGD Implementation Plan (2023–present)
- 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** 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), 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 (member)

Invited Presentations

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, Climate, 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.

Refereed Publications

Total Indexed Publications: 64 | **h-index:** 33 (Web of Science), 36 (Google Scholar)

67. Huang, X., A. Gettelman, B. Medeiros, W. C. Skamarock, CAM-MPAS, Examining tropical convection features at storm-resolving scales over the Maritime Continent region, *J. Geophys. Res. – Atmospheres, in revision*
66. Li, F., D. Chavas, B. Medeiros, K. A. Reed, K. Rasmussen, Upstream surface roughness and terrain are a strong driver of contrast in tornado potential between North and South America, *P. Natl. Acad. Sci.*, 121(25), [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).
55. Andrews, T., A. Bodas-Salcedo, J. M. Gregory, Y. Dong, K. Armour, D. Paynter, P. Lin, A. Modak, T. Mauritsen, J. Cole, B. Medeiros, J. Benedict, H. Douville, R. Roebrig, T. Koshiro, H. Kawai, T. Ogura, J.-L. Dufresne, A. Bodas-Salcedo, R. P. Allan, and C. Liu, 2022: On the effect of historical SST patterns on radiative feedback, *J. Geophys. Res. Atmos.* 127, e2022JD036675, [10.1029/2022JD036675](https://doi.org/10.1029/2022JD036675). [[Eos highlight](#)]
54. Rios-Berrios, R., G. H. Bryan, B. Medeiros, F. Judt, and W. Wang, 2022: Differences in Tropical Rainfall in Aquaplanet Simulations with Resolved or Parameterized Deep Convection. *J. Adv. Model. Earth Syst.*, 14, e2021MS002902. [10.1029/2021MS002902](https://doi.org/10.1029/2021MS002902)

53. Aeronson, Travis, Roger Marchand, H el ene Chepfer, and Brian Medeiros, 2021: When will MISR detect rising high clouds?, *J. Geophys. Res. Atmos.* 127 (2), e2021JD035865, [10.1029/2021JD035865](https://doi.org/10.1029/2021JD035865).
52. Reed, Kevin A, Levi G. Silvers, Allison A. Wing, I-Kuan Hu, and Brian Medeiros, 2021: Using Radiative Convective Equilibrium to Explore Clouds and Climate in the Community Atmosphere Model, *J. Adv. Model. Earth Syst.*, 13, e2021MS002539, [10.1029/2021MS002539](https://doi.org/10.1029/2021MS002539).
51. Medeiros, Brian, Amy C. Clement, James J. Benedict, and Bosong Zhang, 2021: Investigating the impact of cloud radiative feedbacks on tropical precipitation extremes. *npj Climate and Atmospheric Science* 4, 18. [10.1038/s41612-021-00174-x](https://doi.org/10.1038/s41612-021-00174-x).
50. Voigt, Aiko, Nicole Albern, Paulo Ceppi, Kevin Grise, Ying Li, and Brian Medeiros: Clouds, radiation, and atmospheric circulation in the present-day climate and under climate change. *WIREs Climate Change*, 2020;e694. [10.1002/wcc.694](https://doi.org/10.1002/wcc.694)
49. Meehl, G. A., Arblaster, J. M., Bates, S., Richter, J. H., Tebaldi, C., Gettelman, A., B. Medeiros, J. Bacmeister, P. DeRepentigny, N. Rosenbloom, C. Shields, A. Hu, H. Teng, M. Mills, and W. Strand, 2020: Characteristics of future warmer base states in CESM2. *Earth and Space Science*, 7, e2020EA001296. [10.1029/2020EA001296](https://doi.org/10.1029/2020EA001296)
48. Bacmeister, J. T., C. Hannay, B. Medeiros, A. Gettelman, R. Neale, H. B. Fredriksen, W.H. Lipscomb, I. Simpson, D. A. Bailey, M. Holland, K. Lindsay, and B. Otto-Bliesner, 2020: CO₂ increase experiments using the Community Earth System Model (CESM): Relationship to climate sensitivity and comparison of CESM1 to CESM2. *J. Adv. Model. Earth Syst.*, 12, e2020MS002120. [10.1029/2020MS002120](https://doi.org/10.1029/2020MS002120)
47. Rios-Berrios, R., B. Medeiros, and G. H. Bryan, 2020: Mean Climate and Tropical Rainfall Variability in Aquaplanet Simulations using the Model for Prediction Across Scales - Atmosphere, *J. Adv. Model. Earth Syst.*, 12, e2020MS002102. [10.1029/2020MS002102](https://doi.org/10.1029/2020MS002102)
46. Wing, A. A., Stauffer, C. L., Becker, T., Reed, K. A., Ahn, M.-S., Arnold, N. P., et al., 2020: Clouds and convective self-aggregation in a multimodel ensemble of radiative-convective equilibrium simulations. *J. Adv. Model. Earth Syst.*, 12, e2020MS002138. [10.1029/2020MS002138](https://doi.org/10.1029/2020MS002138)
45. Middlemas, E. A., J. E. Kay, B. Medeiros, E. A. Maroon, 2020: Quantifying the influence of cloud radiative feedbacks on arctic surface warming using cloud locking in an earth system model. *Geophys. Res. Lett.*, 47(15), e2020GL089, 207, [10.1029/2020GL089207](https://doi.org/10.1029/2020GL089207)
44. Simpson, Isla R., Julio Bacmeister, Richard B. Neale, Cecile Hannay, Andrew Gettelman, Rolando, R. Garcia, Peter H. Lauritzen, Daniel, R. Marsh, Michael J. Mills, Brian Medeiros, and Jadwiga H. Richter, 2020: An evaluation of the large scale atmospheric circulation and its variability in the Community Earth System Model 2 (CESM2) and other CMIP models, *J. Geophys. Res. Atmos.*, 125, e2020JD032835, [10.1029/2020JD032835](https://doi.org/10.1029/2020JD032835)
43. Medeiros, B., 2020: Aquaplanets as a framework for examination of aerosol effects, *J. Adv. Model. Earth Syst.*, 12, e2019MS001874. [10.1029/2019MS001874](https://doi.org/10.1029/2019MS001874)
42. Benedict, James J., Brian Medeiros, Amy C. Clement, and Jerry G. Olson, 2020: Investigating the role of cloud-radiation interactions in subseasonal tropical disturbances, *Geophys. Res. Lett.*, 47, e2019GL086817, [10.1029/2019GL086817](https://doi.org/10.1029/2019GL086817)
41. Benedict, James J., Brian Medeiros, Amy C. Clement: Atmospheric blocking and other large-scale precursor patterns of landfalling atmospheric rivers in the North Pacific, *J. Geophys. Res. Atmos.*, 124, 11330–11353. [10.1029/2019JD030790](https://doi.org/10.1029/2019JD030790)
40. Middlemas, Eleanor A., Amy Clement, Brian Medeiros: Contributions of atmospheric and oceanic feedbacks to subtropical northeastern sea surface temperature variability, *Clim. Dyn.*, 53, 6877–6890. [10.1007/s00382-019-04964-1](https://doi.org/10.1007/s00382-019-04964-1)

39. Varuolo-Clarke, Arianna M., Kevin A. Reed, Brian Medeiros: Characterizing the North American Monsoon in the Community Atmosphere Model: Sensitivity to Resolution and Topography, *J. Clim.*, 32(23), 8355–8372. [10.1175/JCLI-D-18-0567.1](https://doi.org/10.1175/JCLI-D-18-0567.1)
38. Grise, Kevin A., Brian Medeiros, James J. Benedict, Jerry G. Olson, 2019: Investigating the Influence of Cloud Radiative Effects on the Extratropical Storm Tracks, *Geophys. Res. Lett.* 46. [10.1029/2019GL083542](https://doi.org/10.1029/2019GL083542)
37. Middlemas, E., A. Clement, B. Medeiros, and B. Kirtman, 2019: Cloud radiative feedbacks and El Niño–Southern Oscillation, *J. Clim.* 32, 4661–4680. [10.1175/JCLI-D-18-0842.1](https://doi.org/10.1175/JCLI-D-18-0842.1)
36. Maher P., E. P. Gerber, B. Medeiros, T. Merlis, S. Sherwood, A. Sheshadri, A. Sobel, G. Vallis, A. Voigt, and P. Zurita-Gotor, 2019: Model Hierarchies for Understanding Atmospheric Circulation, *Reviews of Geophysics*, 57. [10.1029/2018RG000607](https://doi.org/10.1029/2018RG000607)
35. Lauritzen, P.H., R.D. Nair, A.R. Herrington, P. Callaghan, S. Goldhaber, J.M. Dennis, J.T. Bacmeister, B.E. Eaton, C.M. Zarzycki, Mark A. Taylor, P.A. Ullrich, T. Dubos, A. Gettelman, R.B. Neale, B. Dobbins, K.A. Reed, C. Hannay, B. Medeiros, J.J. Benedict and J.J. Tribbia, 2018: NCAR release of CAM-SE in CESM2.0: A reformulation of the spectral element dynamical core in dry-mass vertical coordinates with comprehensive treatment of condensates and energy. *J. Adv. Model. Earth Syst.*, 10, 1537–1570. [10.1029/2017MS001257](https://doi.org/10.1029/2017MS001257)
34. Benedict, J., B. Medeiros, A. Clement, and A. Pendergrass, 2017: Sensitivities of the Hydrologic Cycle to Model Physics, Grid Resolution, and Ocean Type in the Aquaplanet Community Atmosphere Model, *J. Adv. Model. Earth Syst.* , 9, 1307–1324. DOI: [10.1002/2016MS000891](https://doi.org/10.1002/2016MS000891)
33. Voigt, A., R. Pincus, B. Stevens, S. Bony, O. Boucher, N. Bellouin, A. Lewinschal, B. Medeiros, Z. Wang, H. Zhang, 2017: Fast and slow shifts of the zonal-mean intertropical convergence zone in response to an idealized anthropogenic aerosol, *J. Adv. Model. Earth Syst.*, 9, 870–892. DOI: [10.1002/2016MS000902](https://doi.org/10.1002/2016MS000902)
32. Webb, M., T. Andrews, A. Bodas-Salcedo, S. Bony, C. Bretherton, R. Chadwick, H. Chepfer, H. Douville, P. Good, J. Kay, S. Klein, R. Marchand, B. Medeiros, P. Siebesma, C. Skinner, B. Stevens, G. Tselioudis, Y. Tsushima, and M. Watanabe, 2017: The Cloud Feedback Model Intercomparison Project (CFMIP) contribution to CMIP6, *Geoscientific Model Development*, 10 (1), 359–384. DOI: [10.5194/gmd-10-359-2017](https://doi.org/10.5194/gmd-10-359-2017)
31. Pendergrass, A., K. A. Reed, and B. Medeiros, 2016: The link between extreme precipitation and convective organization in a warming climate: Global radiative convective equilibrium simulations, *Geophys. Res. Lett.* 43 (21), 11,445–11,452. DOI: [10.1002/2016GL071285](https://doi.org/10.1002/2016GL071285) [eos coverage]
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