Brian Medeiros

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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

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 & Mentoring Experience

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

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.

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.

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.

Research Grants

[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, UEI: LT9CXX8L19G1

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

Representative NCAR Advanced Study Program Postdoctoral Fellow Search Committee (10/2022–present)

Organizing Group President's Strategic Initiative Fund "UCAR Remote Sensing Initiative" (6/2022–present)

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

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.

Refereed Publications

Total Indexed Publications: 62 | **h-index:** 30 (Web of Science), 34 (Google Scholar)

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., in revision*, 10.21203/rs.3.rs-1886895/v1

65. 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, An overview of cloud-radiation denial experiments for the Energy Exascale Earth System Model version 1, *Geophys. Model Dev., submitted*, 10.5194/egusphere-2023-1555

64. Huang, X., A. Gettelman, B. Medeiros, W. Skamarock, CAM-MPAS, Examining the tropical convection features at storm-resolving scales over the Maritime Continent region, *npj Climate and Atmospheric Science, in revision*

63. Davis, I., B. Medeiros, Assessing CESM2 cloud response to climate change using cloud regimes, *J. Climate, in revision*.

62. Raghuraman, S. P., B. Medeiros, A. Gettelman, Observational quantification of tropical high cloud changes and feedbacks, *J. Geophys. Res. – Atmospheres, in revision.*.

61. Duffy, M. L., B. Medeiros, A. Gettelman, T. Eidhammer, Perturbing parameters to understand cloud contributions to climate change, *J. Climate, accepted*.

60. 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, 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.

59. Medeiros, B., J. Shaw, J. E. Kay, I. Davis, Assessing clouds using satellite observations through three generations of global atmosphere models, *Earth and Space Science*, 10, e2023EA002918, 10.1029/2023EA002918.

58. Douville, H., R. Chadwick, M. Saint-Lu, B. Medeiros, 2023: Drivers of dry day sensitivity to increased CO_2, *Geophys. Res. Lett., accepted*. 10.1029/2023GL103200

57. Reed, K., A. Stansfield, W.-C. Hsu, G. Kooperman, A. Akinsanola, W. Hannah, A. Pendergrass, B. Medeiros, Evaluating the simulation of CONUS precipitation by storm type in next-generation configurations of E3SM, *Geophys. Res. Lett.*, e2022GL102409. 10.1029/2022GL102409

56. 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

55. Schlund, M., B. Hassler, A. Lauer, B. Andela, P. Jöckel, R. Kazeroni, S. Loosveldt Tomas, B. Medeiros, V. Predoi, S. Sénési, 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.

54. 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. Roehrig, T. Koshiro, H. Kawai, T. Ogura, J.-L. Dufresne, A. Bodas-Salcedo, R. P. Allan, and C. Liu: On the effect of historical SST patterns on radiative feedback, *J. Geophys. Res. Atmos.* 127, e2022JD036675, 10.1029/2022JD036675. [Eos highlight]

53. Rios-Berrios, R., Bryan, G. H., Medeiros, B., Judt, F., and Wang, W., 2022: Differences in Tropical Rainfall in Aquaplanet Simulations with Resolved or Parameterized Deep Convection. *J. Adv. Model. Earth Syst.*, 14, e2021MS002902. 10.1029/2021MS002902

52. Aerenson, Travis , Roger Marchand, Ḥélène Chepfer, and Brian Medeiros, 2021: When will MISR detect rising high clouds?, *J. Geophys. Res. Atmos.* 127 (2), e2021JD035865, 10.1029/2021JD035865.

51. 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.

50. 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.

49. 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

48. 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

47. Bacmeister, J. T., Hannay, C., Medeiros, B., Gettelman, A., Neale, R., Fredriksen, H. B., et al., 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

46. 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

45. 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

44. 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

43. 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

42. Medeiros, B.: Aquaplanets as a framework for examination of aerosol effects, *J. Adv. Model. Earth Syst.*, 12, e2019MS001874. 10.1029/2019MS001874

41. 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

40. 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

39. 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

38. 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

37. 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

36. 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

35. 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

34. 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

33. 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

32. 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

31. 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

30. 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 [eos coverage]

29. Grise, K. and B. Medeiros, 2016: Understanding the varied influence of mid-latitude jet position on clouds and cloud-radiative effects in observations and global climate models, *J. Clim.*, 29 (24), 9005–9025. DOI: 10.1175/JCLI-D-16-0295.1

28. Pithan, F., A. Ackerman, W. M. Angevine, K. Hartung, L. Ickes, M. Kelley, B. Medeiros, I. Sandu, G.-J. Steeneveld, H. Sterk, G. Svensson, P. A. Vaillancourt, and A. Zadra, 2016:. Select strengths and biases of models in representing the arctic winter boundary layer: The Larcform 1 single column model intercomparison., *J. Adv. Model. Earth Syst.* DOI: 10.1002/2016MS000630

27. Bony, S., B. Stevens, D. Coppin, T. Becker, K. Reed, A. Voigt, and B. Medeiros, 2016: Thermodynamic control of anvil-cloud amount, *P. Natl. Acad. Sci.*, 113 (32), 8927–8932. DOI: 10.1073/pnas.1601472113

26. Gettelman, A., L. Lin, B. Medeiros, and J. Olson, 2016: Climate Feedback Variance and the Interaction of Aerosol Forcing and Feedbacks, *J. Clim.*, 29 (18), 6659–6675. DOI: 10.1175/JCLI-D-16-0151.1

25. Zuidema, P., P. Chang, B. Medeiros, B. Kirtman, R. Mechoso, E. Schneider, T. Toniazzo, I. Richter, J. Small, K. Bellomo, P. Brandt, S. de Szoeke, T. Farrar, E. Jung, S. Kato, M. Li, C. Patricola, Z. Wang, R. Wood, and Z. Xu, 2016: Challenges and Prospects for Reducing Coupled Climate Model SST Biases in the Eastern Tropical Atlantic and Pacific Oceans: The U.S. CLIVAR Eastern Tropical Oceans Synthesis Working Group *Bull. Amer. Meteor. Soc.*, 97 (12), 2305–2327. DOI: 10.1175/BAMS-D-15-00274.1

24. Medeiros, B. and L. Nuijens, 2016: Clouds at Barbados are representative of clouds across the trade-wind regions in observations and climate models, *P. Natl. Acad. Sci.* 113 (22), E3062–E3070, DOI: 10.1073/pnas.1521494113

23. Medeiros, B., David L. Williamson, and Jerry G. Olson, 2016: Reference aquaplanet climate in the Community Atmosphere Model Version 5. *J. Adv. Model. Earth Syst.*, 8 (1), 406–424. DOI: 10.1002/2015MS000593

22. Reed, K. A. and B. Medeiros, 2016: A reduced complexity framework to bridge the gap between AGCMs and cloud-resolving models, *Geophys. Res. Lett.*, 43 (2), 860–866. DOI: 10.1002/2015GL066713

21. Kay, J. E., C. Wall, V. Yettella, B. Medeiros, C. Hannay, P. Caldwell, and C. Bitz, 2016: Global climate impacts of fixing the Southern Ocean shortwave radiation bias in the Community Earth System Model (CESM). *J. Clim.* 29 (12), 4617–4636. DOI: 10.1175/JCLI-D-15-0358.1

20. Zhang, H., A. Clement, B. Medeiros, 2015: The Meridional Mode in an Idealized Aquaplanet Model: Dependence on the Mean State. *J. Clim.,* 29 (8), 2889–2905. DOI: 10.1175/JCLI-D-15-0399.1

19. Nuijens, L., B. Medeiros, I. Sandu, M. Ahlgrimm, 2015: Observed and modeled patterns of co-variability between low-level cloudiness and the structure of the trade-wind layer. *J. Adv. Model. Earth Syst.*, 7 (4), 1741-1764. DOI: 10.1002/2015MS000483

18. Nuijens, L., B. Medeiros, I. Sandu, M. Ahlgrimm, 2015: The behavior of trade-wind cloudiness in observations and models: The major cloud components and their variability, *J. Adv. Model. Earth Syst.*, 7 (2), 600–616. DOI: 10.1002/2014MS000390

17. Reed, K. A., B. Medeiros, J. Bacmeister, P. H. Lauritzen, 2015: Global Radiative-Convective Equilibrium in the Community Atmosphere Model 5, *J. Atmos. Sci.* 72(5), pp. 2183–2197. DOI: 10.1175/JAS-D-14-0268.1

16. Medeiros, B., B. Stevens, and S. Bony, 2015: Using aquaplanets to understand the robust responses of comprehensive climate models to forcing, *Clim. Dyn.* 44(7), pp 1957–1977. DOI: 10.1007/s00382-014-2138-0

15. Kay, J.E., B. Medeiros, Y.-T. Hwang, A. Gettelman, J. Perket, and M.G. Flanner, 2014: Processes controlling Southern Ocean shortwave climate feedbacks in CESM, *Geophys. Res. Lett.*, 41 (2), 616–622. DOI: 10.1002/2013GL058315

14. Ma, H.-Y., S. Xie, S. A. Klein, K. D. Williams, J. S. Boyle, S. Bony, H. Douville, S. Fermepin, B. Medeiros, S. Tyteca, M. Watanabe, and D. Williamson, 2014: On the correspondence between mean forecast errors and climate errors in CMIP5 models, *J. Clim.*, 27, 1781–1798. DOI: 10.1175/JCLI-D-13-00474.1

13. Pithan, F., B. Medeiros, and T. Mauritsen, 2014: Mixed-phase clouds cause GCM biases in Arctic winter boundary layers, *Clim. Dyn.*, 43 (1–2), pp. 289–303. DOI: 10.1007/s00382-013-1964-9

12. Williams, K. D., A. Bodas-Salcedo, M. Déqué, S. Fermepin, B. Medeiros, M. Watanabe, C. Jakob, S. A. Klein, C. A. Senior, and D. L. Williamson, 2013: The Transpose-AMIP II experiment and its application to the understanding of Southern Ocean cloud biases in climate models, *J. Climate*, 26, 3258–3274. DOI: 10.1175/JCLI-D-12-00429.1

11. Seidel, D. J., Y. Zhang, A. C. M. Beljaars, J.-C. Golaz, A. R. Jacobson, and B. Medeiros, 2012: Climatology of the planetary boundary layer over the continental United States and Europe, *J. Geophys. Res.* 117(D17):D17106, DOI: 10.1029/2012JD018143

10. Medeiros, B., D. L. Williamson, C. Hannay, and J. G. Olson, 2012: Southeast Pacific stratocumulus in the Community Atmosphere Model, *J. Climate*, 25, 6175–6192. DOI: 10.1175/JCLI-D-11-00503.1

9. Kay, J. E., B. R. Hillman, S. A. Klein, Y. Zhang, B. Medeiros, R. Pincus, A. Gettelman, B. Eaton, J. Boyle, R. Marchand, and T. P. Ackerman, 2012: Exposing global cloud biases in the Community Atmosphere Model (CAM) using satellite observations and their corresponding instrument simulators, *J. Climate* 25(15), pp. 5190–5207. DOI: 10.1175/JCLI-D-11-00469.1

8. de Boer, G., W. Chapman, J. E. Kay, B. Medeiros, M. D. Shupe, S. Vavrus, and J. Walsh, 2012: A Characterization of the Present-Day Arctic Atmosphere in CCSM4, *J. Climate* 25(8), pp. 2676–2695. DOI: 10.1175/JCLI-D-11-00228.1

7. Medeiros, B., C. Deser, R. A. Tomas, and J. E. Kay 2011: Arctic inversion strength in climate models, *J. Climate*, 24(17), pp. 4733–4740. DOI: 10.1175/2011JCLI3968.1

6. Medeiros, B., and B. Stevens, 2011: Revealing differences in GCM representations of low clouds. *Clim. Dyn.*, 36(1), pp. 385-399. DOI: 10.1007/s00382-009-0694-5

5. Medeiros, B., L. Nuijens, C. Antoniazzi, and B. Stevens, 2010: Low-latitude boundary layer clouds as seen by CALIPSO, *J. Geophys. Res.*, 115, D23207. DOI: 10.1029/2010JD014437

4. Zhang, Y., B. Stevens, B. Medeiros and M. Ghil, 2009: Low-cloud fraction, lower-tropospheric stability and large-scale divergence. *J. Climate*, 22, 4827-4844. DOI: 10.1175/2009JCLI2891.1

3. Medeiros, B., B. Stevens, I. M. Held, M. Zhao, D. L. Williamson, J. G. Olson, and C. S. Bretherton, 2008: Aquaplanets, climate sensitivity, and low clouds. *J. Climate*, 21(19), p. 4974–4991. DOI: 10.1175/2008JCLI1995.1

2. Rauber, R.M., B. Stevens, J. Davison, S. Göke, O.L. Mayol-Bracero, D. Rogers, P. Zuidema, H.T. Ochs, C. Knight, J. Jensen, S. Bereznicki, S. Bordoni, H. Caro-Gautier, M. Colón-Robles, M. Deliz, S. Donaher, V. Ghate, E. Grzeszczak, C. Henry, A. Marie Hertel, I. Jo, M. Kruk, J. Lowenstein, J. Malley, B. Medeiros, Y. Méndez-Lopez, S. Mishra, F. Morales-García, L.A. Nuijens, D. O'Donnell, D.L. Ortiz-Montalvo, K. Rasmussen, E. Riepe, S. Scalia, E. Serpetzoglou, H. Shen, M. Siedsma, J. Small, E. Snodgrass, P. Trivej, and J. Zawislak, 2007: In the Driver's Seat: Rico and Education. *Bull. Amer. Meteor. Soc.*, 88, 1929–1937. DOI: 10.1175/BAMS-88-12-1929

1. Medeiros, B., A. Hall, and B. Stevens, 2005: What controls the climatological depth of the PBL? *J. Climate*, 18(16), p. 2877–2892. DOI: 10.1175/JCLI3417.1

0. Karner, D. B., J. Levine, B.P. Medeiros, and R.A. Muller, 2002: Constructing a stacked benthic $\delta^{18}O$ record. *Paleoceanography*, 17(3), p. 2-1 – 2-17. DOI: 10.1029/2001PA000667

Other Publications

8. Craig, C., and others, 2021: CAM6.3 User's Guide, *NCAR Tech. Notes*, No. NCAR/TN-571+EDD. 10.5065/Z953-ZC95

7. Tilmes, Simone, Andrea Smith, Peter Lawrence, Tim Barnes, Greeshma Gadikota, Wojciech Grabowski, Douglas G. MacMartin, Brian Medeiros, Monica Morrison, Andreas Prein, Roy Rasmussen, Karen Rosenlof, Dale S. Rothman, Anton Seimon, Gyami Shrestha, and Britton B. Stephens, 2021: Developing a framework for an interdisciplinary and international climate intervention strategies research program, *Bulletin of the American Meteorological Society*, 10.1175/BAMS-D-21-0053.1.

6. Polvani, L M, A C Clement, B Medeiros, J J Benedict, and I R Simpson, 2017: When less is more: Opening the door to simpler climate models, *Eos*, 98, DOI: 10.1029/2017EO079417. (reviewed)

5. Kinter J, O'Brien T, Klein, S, Lin SJ, Medeiros B, Penny S, Putman W, Raeder K, Mariotti A, Joseph R, 2016: High-Resolution Coupling and Initialization to Improve Predictability and Predictions in Climate Models Workshop. U.S. Department of Energy, DOE/SC-0183; U.S. Department of Commerce NOAA Technical Report OAR CPO-5. DOI: 10.7289/V5K35RNX.

4. Zuidema et al. Challenges and Future Prospects for Reducing Coupled Climate Model SST Biases in the Eastern Tropical Atlantic and Pacific Oceans: A White Paper by the U.S. CLIVAR Eastern Tropical Oceans Synthesis Working Group.

3. Medeiros, B, 2013, Book Review: "Atmosphere, Clouds and Climate" by David Randall, Bull. Amer. Meteor. Soc., 94(8), pp. 1227–1228, August 2013.

2. Medeiros, B, 2011: Comparing the southern hemisphere stratocumulus decks in the Community Atmosphere Model. U.S. CLIVAR Newsletter, Vol. 9 No. 2, Washington, DC, 20006.

1. Karner, Daniel B, Brian Medeiros, Richard A Muller, 1999: Dansgaard-Oeschger events and the 1.5-kyr cycle. Lawrence Berkeley Nat'l Lab Technical Report, LBNL-44529.