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Education

- 2015 **PhD**, Meteorology, University of Hawai'i (UH) at Mānoa, HI, USA
2009 **Diplom** (German equivalent of combined BS/MS degree), Marine Environmental Sciences, Carl von Ossietzky University Oldenburg, Germany

Professional Experience

- 2020–Present **Assistant Professor**, Department of Oceanography & International Pacific Research Center (IPRC), UH Mānoa, HI, USA
2018–2019 **Assistant Project Leader (Research Professor)**, leading the "Tropical climate dynamics: past, present, future" group at the IBS Center for Climate Physics (ICCP), Pusan National University, South Korea
2016–2018 **NOAA Climate & Global Change Postdoctoral Fellow**, Department of Atmospheric Sciences, University of Washington, WA, USA
2015–2017 **NOAA Affiliate (Visitor/Collaborator)**, Geophysical Fluid Dynamics Laboratory (GFDL), NJ, USA
2015–2016 **Postdoctoral Researcher**, Department of Atmospheric Sciences, UH Mānoa, HI, USA

Selected Honors & Awards

- 2023 **International Association for the Physical Sciences of the Oceans (IAPSO) Early Career Scientist Medal in Physical Oceanography**; Citation: *"for his fundamental contributions to understanding the dynamics of tropical climate variability, its interactions with other parts of the climate system, and elucidating the spatial patterns of climate change"*
2022 **NSF CAREER Award**
2020 **Kamide Lecture Award**, Asia Oceania Geosciences Society (AOGS; Atmosphere Sciences section); Awarded annually in each AOGS section to one early career researcher for outstanding scientific contributions
2020 **AGU Editors' Citation for Excellence in Refereeing – Geophysical Research Letters**
2018 **STS forum (Science and Technology in Society forum) Future Leaders Program fellow**, Kyoto, Japan; Awarded annually to about 150 future global leaders from academia, industry, and public sectors
2016 **European Geosciences Union (EGU) Outstanding Young Scientist Award of the "Climate: Past, Present & Future (CL)" Division**; Citation: *"for his combination tones theory on the annual cycle and El Niño-Southern Oscillation interactions"*
2016 **NOAA Climate & Global Change postdoctoral fellowship** recipient (alumni class 26)

2016 European Geosciences Union (EGU) Outstanding Student Poster and PICO (OSPP)
Award of the "Nonlinear Processes in Geosciences (NP)" Division

Grants and Fellowships

At UH (since 2020; only PIs/Co-PIs/Co-Is are listed):

- 2023–2026 F.-F. Jin (lead PI), **M. F. Stuecker (Co-PI)**, N. Li, A. T. Wittenberg, and Z. Yang; NOAA grant; Developing Dynamically Constrained Projections of ENSO Activity and Associated Coastal Hazards – An Application to the Hawaiian and US-Affiliated Pacific Islands; UH budget: \$537,833
- 2023–2026 M. J. Widlansky (lead PI) and **M. F. Stuecker (Co-PI)**; NOAA grant; Assessing opportunities for improved coastal data assimilation in ocean model analyses and seasonal forecasting systems; UH budget: \$741,513
- 2022–2027 **M. F. Stuecker (sole PI)**; NSF CAREER award (NSF-AGS2141728); CAREER: Understanding the local and remote drivers of regional climate change; UH budget: \$718,487
- 2021–2024 **M. F. Stuecker (PI US institution)**, J. Boucharel, and L. Renault; Thomas Jefferson Fund (FACE Foundation); Multi Scale Interactions in the PacifiC (MUSIC) - Development of Tropical Instability Waves parameterizations for improving El Niño simulations in Earth System Models; Joint US-French project; UH budget: \$10,000
- 2021–2024 C. Sabine (lead PI), B. Powell, K. Oleson, T. Friedrich, **M. F. Stuecker (co-I)**, and B. Fulton; NOAA grant NA21OAR0170191; Assessing Current and Future Ocean Acidification and Climate Vulnerabilities Along the Hawaiian Archipelago; UH budget: \$1,039,556
- 2020–2024 B. Powell (lead PI), R. Rykaczewski, M. Weijerman, P. A. Woodworth-Jefcoats, **M. F. Stuecker (co-I)**, and T. Friedrich; NOAA grant NA20OAR4310445; Future Climate Impacts on the Pelagic and Coastal Fisheries of Hawai'i; UH budget: \$509,864

Prior to UH (before 2020):

- 2018–2019 Research Group funding via ICCP (PI salary plus funding for 3 supervised postdocs)
- 2016–2018 NOAA Climate & Global Change fellowship
- 2015 Bjerknes visiting fellowship, Bjerknes Centre, University of Bergen
- 2006–2007 Floyd and Lili Biava foundation fellowship, Carl von Ossietzky University Oldenburg

Publications

authorship by formally advised students, formally co-advised students, visiting graduate students, and formally advised postdocs are solid underlined

†: I am corresponding author (only marked when I am *not* also first author at the same time)

††: I am a coordinating lead author on review paper

informally mentored student first authors are dashed underlined

Google Scholar Profile: <https://scholar.google.com/citations?user=SIz5A80AAAAJ&hl=en>

Peer-reviewed journal articles

97. Friedrich, T., B. S. Powell, J. L. Gunnarson, G. Liu, S. F. Giardina, **M. F. Stuecker**, L. Hošeková, K. Feloy, and C. A. Stock (2024), Submesoscale-permitting physical/biogeochemical future pro-

- jections for the main Hawaiian Islands, *Journal of Advances in Modeling Earth Systems*, 16, e2023MS003855
96. Armour, K. C., C. Proistosescu, Y. Dong, L. C. Hahn, E. Blanchard-Wrigglesworth, A. G. Pauling, R. C. Jnglin Wills, T. Andrews, **M. F. Stuecker**, S. Po-Chedley, I. Mitevski, P. M. Forster, and J. M. Gregory (2024), Sea-surface temperature pattern effects have slowed global warming and biased warming-based constraints on climate sensitivity, *Proceedings of the National Academy of Sciences*, *in press*
95. Hauri, C., R. Pages, K. S. Hedstrom, S. C. Doney, S. Dupont, B. Ferriss, and **M. F. Stuecker** (2024), More than marine heatwaves: A new regime of heat, acidity, and low oxygen compound extreme events in the Gulf of Alaska, *AGU Advances*, 5, e2023AV001039
94. Widiasih, E. R., A. Keane, and **M. F. Stuecker** (2024), The Mid-Pleistocene Transition from Budyko's Energy Balance Model, *Physica D: Nonlinear Phenomena*, 458, 133991, doi:10.1016/j.physd.2023.133991
93. **Stuecker, M. F.** (2023), The Climate Variability Trio: stochastic fluctuations, El Niño, and the seasonal cycle, *Geoscience Letters*, 10, 51, doi:10.1186/s40562-023-00305-7
92. Capotondi, A., S. McGregor, M. J. McPhaden, S. Cravatte, N. J. Holbrook, Y. Imada, S. C. Sanchez, J. Sprintall, †**M. F. Stuecker**, C. C. Ummenhofer, M. Zeller, R. Farneti, G. Graffino, S. Hu, K. B. Karinauskas, Y. Kosaka, F. Kucharski, M. Mayer, B. Qiu, A. Santoso, A. S. Taschetto, F. Wang, X. Zhang, R. M. Holmes, J.-J. Luo, N. Maher, C. Martinez-Villalobos, G. A. Meehl, R. Naha, N. Schneider, S. Stevenson, A. Sullivan, P. van Rensch, and T. Xu (2023), Mechanisms of Tropical Pacific Decadal Variability, *Nature Reviews Earth & Environment*, 4, 754-769
91. Yamaguchi, R., J.-E. Kim, K. B. Rodgers, K. Stein, A. Timmermann, S.-S. Lee, L. Huang, **M. F. Stuecker**, J. T. Fasullo, G. Danabasoglu, C. Deser, J.-F. Lamarque, N. A. Rosenbloom, and J. Edwards (2023), Persistent ocean anomalies as a response to Northern Hemisphere heating induced by biomass burning variability, *J. Climate*, *in press*
90. Liu, C., S.-I. An, F.-F. Jin, **M. F. Stuecker**, W. Zhang, J.-S. Kug, X. Yuan, J. Shin, A. Xue, X. Geng, and S.-K. Kim (2023), ENSO skewness hysteresis and associated changes in strong El Niño under a CO₂ removal scenario, *npj Climate and Atmospheric Science*, 6, doi:10.1038/s41612-023-00448-6
89. Xuan, Z., W. Zhang, F. Jiang, **M. F. Stuecker**, and F.-F. Jin (2023), Seasonally-varying characteristics of tropical Pacific westerly wind bursts during El Niño due to annual cycle modulation, *Clim Dyn*, *in press*
88. Takahashi, N., K. J. Richards, N. Schneider, **M. F. Stuecker**, H. Annamalai, and M. Nonaka (2023), Observed relative contributions of anomalous heat fluxes and effective heat capacity to sea surface temperature variability, *Geophys. Res. Lett.*, 50, e2023GL103165
87. Hu, S., W. Zhang, F.-F. Jin, L.-C. Hong, F. Jiang, and **M. F. Stuecker** (2023), Seasonal dependence of Pacific-North American teleconnection associated with ENSO and its interaction with the annual cycle, *J. Climate*, doi:10.1175/JCLI-D-23-0148.1
86. Ham, Y.-G., J.-H. Kim, S.-K. Min, D. Kim, T. Li, A. Timmermann, and **M. F. Stuecker** (2023), Anthropogenic fingerprints in daily precipitation revealed by deep learning, *Nature*, doi:10.1038/s41586-023-06474-x
85. Jiang, F., W. Zhang, F.-F. Jin, **M. F. Stuecker**, A. Timmermann, M. J. McPhaden, J. Boucharel, and A. T. Wittenberg (2023), Resolving the Tropical Pacific/Atlantic Interaction Conundrum, *Geophys. Res. Lett.*, 50, e2023GL103777
84. Liu, C., S.-I. An, F.-F. Jin, J. Shin, J.-S. Kug, W. Zhang, **M. F. Stuecker**, X. Yuan, A. Xue, X. Geng, and S.-K. Kim (2023), Hysteresis of the El Niño-Southern Oscillation to CO₂ forcing, *Science Advances*, 9, doi:10.1126/sciadv.adh8442
83. Kim, J.-E., R. Yamaguchi, K. B. Rodgers, A. Timmermann, S.-S. Lee, K. Stein, G. Danabasoglu, J.-F. Lamarque, J. T. Fasullo, C. Deser, N. Rosenbloom, J. Edwards, and **M. F. Stuecker** (2023), Interannual fires as a source for subarctic summer decadal climate variability mediated by permafrost thawing, *npj Climate and Atmospheric Science*, 6, doi:10.1038/s41612-023-00415-1
82. Maher, N., R. C. J. Wills, P. DiNezio, J. Klavans, S. Milinski, S. C. Sanchez, S. Stevenson, **M. F.**

- Stuecker, and X. Wu (2023), The future of the El Niño-Southern Oscillation: Using large ensembles to illuminate time-varying responses and inter-model differences, *Earth System Dynamics*, 14, 413–431
81. Shin, N.-Y., J.-S. Kug, **M. F. Stuecker**, F.-F. Jin, A. Timmermann, and G.-I. Kim (2022), More Frequent Central Pacific El Niño and Stronger Eastern Pacific El Niño in a Warmer Climate, *npj Climate and Atmospheric Science*, 5, 101
 80. Maillard, L., J. Boucharel, **M. F. Stuecker**, F.-F. Jin, and L. Renault (2022), Modulation of the Eastern Equatorial Pacific seasonal cycle by Tropical Instability Waves, *Geophys. Res. Lett.*, 49, e2022GL100991
 79. Frazier, A. G., B. T. Yen, **M. F. Stuecker**, K. M. Nelson, B. O. Sander, M. B. Kantar, and D. R. Wang (2022), Impact of historical climate variability on rice production in Mainland Southeast Asia across multiple scales, *Anthropocene*, 40, 100353
 78. Richter, I., **M. F. Stuecker**, N. Takahashi, and N. Schneider (2022), Disentangling the North Pacific Meridional Mode from tropical Pacific variability, *npj Climate and Atmospheric Science*, 5, 94
 77. Kim, D., H. Kim, S. M. Kang, **M. F. Stuecker**, and T. M. Merlis (2022), Weak future Hadley cell intensity changes due to compensating effects of tropical and extratropical radiative forcing, *npj Climate and Atmospheric Science*, 5, doi:10.1038/s41612-022-00287-x
 76. Santer, B. D., S. Po-Chedley, N. Feldl, J. C. Fyfe, Q. Fu, S. Solomon, M. England, K. B. Rodgers, **M. F. Stuecker**, C. Mears, C.-Z. Zou, C. J. W. Bonfils, G. Pallotta, M. D. Zelinka, N. Rosenbloom, and J. Edwards (2022), Robust anthropogenic signal identified in the seasonal cycle of tropospheric temperature, *J. Climate*, 35, 6075–6100, doi:10.1175/JCLI-D-21-0766.1
 75. Liu, C., W. Zhang, F.-F. Jin, **M. F. Stuecker**, and L. Geng (2022), Equatorial Origin of the Observed Tropical Pacific Quasi-decadal Variability from ENSO Nonlinearity, *Geophys. Res. Lett.*, 49, e2022GL097903
 74. Zhang, H., W. Zhang, X. Geng, F. Jiang, and **M. F. Stuecker** (2022), Seasonally modulated El Niño precipitation response in the eastern Pacific and its dependence on El Niño flavors, *J. Climate*, 35, 5449–5462, doi:10.1175/JCLI-D-21-0826.1
 73. Jeong, H., H.-S. Park, **M. F. Stuecker**, and S.-W. Yeh (2022), Record low Arctic sea ice extent in 2012 linked to two-year La Niña-driven sea surface temperature pattern, *Geophys. Res. Lett.*, 49, e2022GL098385
 72. Zhang, Y., S.-Y. Yu, D. J. Amaya, Y. Kosaka, **M. F. Stuecker**, J.-C. Yang, X. Lin, and L. Fan (2022), Atmospheric Forcing of the Pacific Meridional Mode: Tropical Pacific-Driven versus Internal Variability, *Geophys. Res. Lett.*, 49, e2022GL098148
 71. Chung, E.-S., J.-S. Kim, A. Timmermann, K.-J. Ha, S.-K. Lee, **M. F. Stuecker**, K. B. Rodgers, S.-S. Lee, and L. Huang (2022), Antarctic sea ice expansion and Southern Ocean cooling linked to tropical variability, *Nature Climate Change*, 12, 461–468
 70. Huang, Z., W. Zhang, C. Liu, and **M. F. Stuecker** (2022), Extreme Indian Ocean dipole events associated with El Niño and Madden-Julian oscillation, *Clim Dyn*, 59, 1953–1968, doi:10.1007/s00382-022-06190-8
 69. Park, C., S. M. Kang, **M. F. Stuecker**, and F.-F. Jin (2022), Distinct Surface Warming Response over the Western and Eastern Equatorial Pacific to Radiative Forcing, *Geophys. Res. Lett.*, 49, e2021GL095829, doi:10.1029/2021GL095829
 68. Jeong, H., H.-S. Park, **M. F. Stuecker**, and S.-W. Yeh (2022), Distinct impacts of major El Niño events on Arctic temperatures due to differences in eastern tropical Pacific sea surface temperatures, *Science Advances*, 8, doi:10.1126/sciadv.abl8278
 67. Jiang, F., W. Zhang, F.-F. Jin, and **M. F. Stuecker** (2021), Meridional migration of ENSO impact on tropical Atlantic precipitation controlled by the seasonal cycle, *Geophys. Res. Lett.*, 48, e2021GL096365, doi:10.1029/2021GL096365
 66. Rodgers, K. B., S.-S. Lee, N. Rosenbloom, A. Timmermann, G. Danabasoglu, C. Deser, J. Edwards, J.-E. Kim, I. Simpson, K. Stein, **M. F. Stuecker**, R. Yamaguchi, T. Bodai, E.-S. Chung, L.

- Huang, W. M. Kim, J.-F. Lamarque, D. L. Lombardozzi, W. R. Wieder, and S. G. Yeager (2021), Ubiquity of human-induced changes in climate variability, *Earth System Dynamics*, 12, 1393-1411, doi:10.5194/esd-12-1393-2021
65. Jiang, F., W. Zhang, F.-F. Jin, M. F. Stuecker, and R. Allan (2021), El Niño Pacing Orchestrates Inter-Basin Pacific-Indian Ocean Interannual Connections, *Geophys. Res. Lett.*, 48, e2021GL095242, doi:10.1029/2021GL095242
64. Zhao, S., F.-F. Jin, and **M. F. Stuecker** (2021), Understanding Lead Times of Warm-Water-Volumes to ENSO Sea Surface Temperature Anomalies, *Geophys. Res. Lett.*, 48, e2021GL094366
63. Wengel, C., S.-S. Lee, **M. F. Stuecker**, A. Timmermann, J.-E. Chu, and F. Schloesser (2021), Future high-resolution El Niño/Southern Oscillation dynamics, *Nature Climate Change*, 11, 758-765, doi:10.1038/s41558-021-01132-4
62. Hauri, C., R. Pagès, A. M. P. McDonnell, **M. F. Stuecker**, S. L. Danielson, K. Hedstrom, B. Irving, C. Schultz, and S. C. Doney (2021), Modulation of ocean acidification by decadal climate variability in the Gulf of Alaska, *Communications Earth & Environment*, 2:191, doi:10.1038/s43247-021-00254-z
61. Liu, C., W. Zhang, F. Jiang, **M. F. Stuecker**, and Z. Huang (2021), Record-low WNP tropical cyclone activity in early summer 2020 due to Indian Ocean warming and Madden-Julian Oscillation activity, *Geophys. Res. Lett.*, 48, e2021GL094578
60. Cai, W., A. Santoso, M. Collins, B. Dewitte, C. Karamperidou, J.-S. Kug, M. Lengaigne, M. J. McPhaden, **M. F. Stuecker**, A. S. Taschetto, A. Timmermann, L. Wu, S.-W. Yeh, G. Wang, B. Ng, F. Jia, Y. Yang, J. Ying, X. Zheng, T. Bayr, J. R. Brown, A. Capotondi, K. C. Cobb, B. Gan, T. Geng, Y.-G. Ham, F.-F. Jin, H.-S. Jo, X. Li, X. Lin, S. McGregor, J.-H. Park, K. Stein, K. Yang, L. Zhang, and W. Zhong (2021), Changing ENSO in a warming climate, *Nature Reviews Earth & Environment*, 2, 628-644, doi:10.1038/s43017-021-00199-z
59. Kim, I.-W., **M. F. Stuecker**, A. Timmermann, E. Zeller, J.-S. Kug, S.-W. Park, and J.-S. Kim (2021), Tropical Indo-Pacific SST influences on vegetation variability in eastern Africa, *Scientific Reports*, 11, doi:10.1038/s41598-021-89824-x
58. Shin, Y., S. M. Kang, K. Takahashi, **M. F. Stuecker**, Y.-T. Hwang, and **D. Kim** (2021), Evolution of the Tropical Response to Periodic Extratropical Thermal Forcing, *J. Climate*, 34, 6335-6353, doi:10.1175/JCLI-D-20-0493.1
57. Zhang, W., F. Jiang, **M. F. Stuecker**, F.-F. Jin, and A. Timmermann (2021), Spurious North Tropical Atlantic precursors to El Niño, *Nature Communications*, 12, doi:10.1038/s41467-021-23411-6
56. Zhang, Y., S. Yu, D. J. Amaya, Y. Kosaka, S. M. Larson, X. Wang, J.-C. Yang, **M. F. Stuecker**, S.-P. Xie, A. J. Miller, and X. Lin (2021), Pacific Meridional Modes without Equatorial Pacific Influence, *J. Climate*, 34, 5285-5301, doi:10.1175/JCLI-D-20-0573.1
55. Zhang, W., Z. Huang, F. Jiang, **M. F. Stuecker**, G. Chen, and F.-F Jin (2021), Exceptionally persistent Madden-Julian Oscillation activity contributes to the extreme 2020 East Asian summer monsoon rainfall, *Geophys. Res. Lett.*, doi:10.1029/2020GL091588
54. Chung, E.-S., K.-J. Ha, A. Timmermann, **M. F. Stuecker**, T. Bodai, and S.-K. Lee (2021), Cold-Season Arctic Amplification Driven by Arctic Ocean-Mediated Seasonal Energy Transfer, *Earth's Future*, 9, e2020EF001898, doi:10.1029/2020EF001898
53. Yun, K.-S., A. Timmermann, and **M. F. Stuecker** (2021), Synchronized spatial shifts of Hadley and Walker circulations, *Earth System Dynamics*, 12, 121-132, doi:10.5194/esd-12-121-2021
52. **Stuecker**, M. F., C. Karamperidou, A. D. Nugent, G. Torri, S. Coats, and S. Businger (2021), Comment on "The Financial Dilemma of Students Pursuing an Atmospheric Science Graduate Degree in the United States" by Card et al. (2020), *Bull. Am. Meteorol. Soc.*, 102, 323-324, doi:10.1175/BAMS-D-20-0265.1
51. Zhang, W., W. Mao, F. Jiang, **M. F. Stuecker**, F.-F. Jin, and L. Qi (2021), Tropical Indo-Pacific compounding thermal conditions drive the 2019 Australian extreme drought, *Geophys. Res. Lett.*, 48, e2020GL090323, doi:10.1029/2020GL090323
50. Yun, K.-S., J.-Y. Lee, A. Timmermann, K. Stein, **M. F. Stuecker**, J. C. Fyfe, and E.-S. Chung (2021),

- Increasing ENSO rainfall variability due to changes in future tropical temperature-rainfall relationship, *Communications Earth & Environment*, 2, doi:10.1038/s43247-021-00108-8
49. Chu, J.-E., S.-S. Lee, A. Timmermann, C. Wengel, **M. F. Stuecker**, and R. Yamaguchi (2020), Reduced tropical cyclone densities and ocean effects due to anthropogenic greenhouse warming, *Science Advances*, 6, eabd5109, doi:10.1126/sciadv.abd5109
48. Kang, S. M., S.-P. Xie, Y. Shin, H. Kim, Y.-T. Hwang, **M. F. Stuecker**, B. Xiang, and M. Hawcroft (2020), Walker circulation response to extratropical radiative forcing, *Science Advances*, 6, eabd3021, doi:10.1126/sciadv.abd3021
47. Hayashi, M., F.-F. Jin, and **M. F. Stuecker** (2020), Dynamics for El Niño-La Niña asymmetry constrain equatorial-Pacific warming pattern, *Nature Communications*, 11, doi:10.1038/s41467-020-17983-y
46. Li, Z., W. Zhang, F.-F. Jin, **M. F. Stuecker**, C. Sun, A. F. Z. Levine, H. Xu, and C. Liu (2020), A Robust Relationship between Multidecadal Global Warming Rate Variations and the Atlantic Multidecadal Variability, *Clim Dyn*, doi:10.1007/s00382-020-05362-8
45. Park, S.-W., J.-S. Kim, J.-S. Kug, **M. F. Stuecker**, I.-W. Kim, and M. Williams (2020), Two aspects of decadal ENSO variability modulating the long-term global carbon cycle, *Geophys. Res. Lett.*, 47, doi:10.1029/2019GL086390
44. Jiang, F., W. Zhang, **M. F. Stuecker**, and F.-F. Jin (2020), Decadal change of Combination Mode spatiotemporal characteristics due to an ENSO regime shift, *J. Climate*, 33, 5239–5251, doi:10.1175/JCLI-D-19-0822.1
43. Geng, X., W. Zhang, F.-F. Jin, **M. F. Stuecker**, and A. F. Z. Levine (2020), Modulation of the relationship between ENSO and its combination mode by the Atlantic Multidecadal Oscillation, *J. Climate*, 33, 4679–4695, doi:10.1175/JCLI-D-19-0740.1
42. Loeb, N. G., H. Wang, R. Allan, T. Andrews, K. Armour, J. N. S. Cole, J.-L. Dufresne, P. Forster, A. Gettelman, H. Guo, T. Mauritzen, Y. Ming, D. Paynter, C. Proistosescu, **M. F. Stuecker**, U. Willén, and K. Wyser (2020), New Generation of Climate Models Track Recent Unprecedented Changes in Earth's Radiation Budget Observed by CERES, *Geophys. Res. Lett.*, 47, e2019GL086705, doi:10.1029/2019GL086705
41. Zhao, S., †**M. F. Stuecker**, F.-F. Jin, J. Feng, H.-L. Ren, W. Zhang, and J. Li (2020), Improved Predictability of the Indian Ocean Dipole using a Stochastic-Dynamical Model compared to the North American Multi-Model Ensemble Forecast, *Weather and Forecasting*, 35, 379–399
40. Stuecker, M. F., A. Timmermann, F.-F. Jin, C. Proistosescu, S. M. Kang, D. Kim, K.-S. Yun, E.-S. Chung, J.-E. Chu, C. M. Bitz, K. C. Armour, and M. Hayashi (2020), Strong remote control of future equatorial warming by off-equatorial forcing, *Nature Climate Change*, 10, 124–129, doi:10.1038/s41558-019-0667-6
39. Liu, C., W. Zhang, **M. F. Stuecker**, and F.-F. Jin (2019), Pacific meridional mode-western North Pacific tropical cyclone linkage explained by tropical Pacific quasi-decadal variability, *Geophys. Res. Lett.*, 46, 13346–13354, doi:10.1029/2019GL085340
38. Jiang, F., W. Zhang, X. Geng, **M. F. Stuecker**, and C. Liu (2019), Impacts of Central Pacific El Niño on Southern China spring precipitation controlled by its longitudinal position, *J. Climate*, 32, 7823–7836, doi:10.1175/JCLI-D-19-0266.1
37. Zhao, S., F.-F. Jin, and †**M. F. Stuecker** (2019), Improved predictability of the Indian Ocean Dipole using seasonally modulated ENSO forcing forecasts, *Geophys. Res. Lett.*, 46, 9980–9990
36. Zhang, W., S. Li, F.-F. Jin, R. Xie, C. Liu, **M. F. Stuecker**, and A. Xue (2019), ENSO regime changes responsible for decadal phase relationship variations between ENSO sea surface temperature and warm water volume, *Geophys. Res. Lett.*, 46, 7546–7553, doi:10.1029/2019GL082943
35. Li, Z., W. Zhang, **M. F. Stuecker**, H. Xu, F.-F. Jin, and C. Liu (2019), Different effects of two ENSO types on Arctic surface temperature in boreal winter, *J. Climate*, 32, 4943–4961, doi:10.1175/JCLI-D-18-0761.1
34. Tian, B., H.-L. Ren, F.-F. Jin, and **M. F. Stuecker** (2019), Diagnosing the representation and causes of

- the ENSO Persistence Barrier in CMIP5 simulations, *Clim Dyn*, 53, 2147–2160, doi:10.1007/s00382-019-04810-4
33. Liu, C., W. Zhang, X. Geng, **M. F. Stuecker**, and F.-F. Jin (2019), Modulation of Tropical Cyclones in the Southeastern part of the Western North Pacific by tropical Pacific decadal variability, *Clim Dyn*, 53, 4475–4488, doi:10.1007/s00382-019-04799-w
 32. Cai, W., L. Wu, M. Lengaigne, T. Li, S. McGregor, J.-S. Kug, J.-Y. Yu, ††**M. F. Stuecker**, A. Santoso, X. Li, Y.-G. Ham, Y. Chikamoto, B. Ng, M. J. McPhaden, Y. Du, D. Dommenget, F. Jia, J. B. Kajtar, N. Keenlyside, X. Lin, J.-J. Luo, M. Martín-Rey, Y. Ruprich-Robert, G. Wang, S.-P. Xie, Y. Yang, S. M. Kang, J.-Y. Choi, B. Gan, G.-I. Kim, C.-E. Kim, S. Kim, J.-H. Kim, and P. Chang (2019), Pantropical climate interactions, *Science*, 363, eaav4236, doi:10.1126/science.aav4236
 31. **Stuecker, M. F.**, C. M. Bitz, K. C. Armour, C. Proistosescu, S. M. Kang, S.-P. Xie, D. Kim, S. McGregor, W. Zhang, S. Zhao, W. Cai, Y. Dong, and F.-F. Jin (2018), Polar amplification dominated by local forcing and feedbacks, *Nature Climate Change*, 8, 1076–1081, doi:10.1038/s41558-018-0339-y
 30. Timmermann, A., S.-I. An, J.-S. Kug, F.-F. Jin, W. Cai, A. Capotondi, K. Cobb, M. Lengaigne, M. J. McPhaden, ††**M. F. Stuecker**, K. Stein, A. Wittenberg, K.-S. Yun, T. Bayr, H.-C. Chen, Y. Chikamoto, B. Dewitte, D. Dommenget, P. Grothe, E. Guilyardi, Y.-G. Ham, M. Hayashi, S. Ineson, D. Kang, S. Kim, W. M. Kim, J.-Y. Lee, T. Li, J.-J. Luo, S. McGregor, Y. Planton, S. Power, H. Rashid, H.-L. Ren, A. Santoso, K. Takahashi, A. Todd, G. Wang, G. Wang, R. Xie, W.-H. Yang, S.-W. Yeh, J. Yoon, E. Zeller, and X. Zhang (2018), El Niño-Southern Oscillation Complexity, *Nature*, 559, 535–545
 29. **Stuecker, M. F.**, M. Tigchelaar, and M. B. Kantar (2018), Climate variability impacts on rice production in the Philippines, *PLoS ONE*, 13(8), e0201426, doi:10.1371/journal.pone.0201426
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 27. McGregor, S., **M. F. Stuecker**, J. B. Kajtar, M. H. England, and M. Collins (2018), Model Tropical Atlantic biases underpin diminished Pacific decadal variability, *Nature Climate Change*, 8, 493–498, doi:10.1038/s41558-018-0163-4
 26. Zhang, W., Z. Wang, **M. F. Stuecker**, A. G. Turner, F.-F. Jin, and X. Geng (2018), Impact of ENSO longitudinal position on teleconnections to the NAO, *Clim Dyn*, doi:10.1007/s00382-018-4135-1
 25. **Stuecker, M. F.** (2018), Revisiting the Pacific Meridional Mode, *Scientific Reports*, 8, doi:10.1038/s41598-018-21537-0
 24. Park, K., S. M. Kang, D. Kim, **M. F. Stuecker**, and F.-F. Jin (2018), Contrasting local and remote effects of surface heating on polar warming and amplification, *J. Climate*, doi:10.1175/JCLI-D-17-0600.1
 23. Geng, X., W. Zhang, F.-F. Jin, and **M. F. Stuecker** (2018), A new method for interpreting nonstationary running correlations and its application to the ENSO-EAWM relationship, *Geophys. Res. Lett.*, 45, 327–334, doi:10.1002/2017GL076564
 22. Kang, S. M., K. Park, F.-F. Jin, and **M. F. Stuecker** (2017), Common warming pattern emerges irrespective of forcing location, *J Adv Model Earth Sy*, 9, 2413–2424, doi:10.1002/2017MS001083
 21. **Stuecker, M. F.**, C. M. Bitz, and K. C. Armour (2017), Conditions leading to the unprecedented low Antarctic sea ice extent during the 2016 austral spring season, *Geophys. Res. Lett.*, 44, 9008–9019, doi:10.1002/2017GL074691
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 19. **Stuecker, M. F.**, A. Timmermann, F.-F. Jin, Y. Chikamoto, W. Zhang, A. T. Wittenberg, E. Widiasih, and S. Zhao (2017), Revisiting ENSO/Indian Ocean Dipole phase relationships, *Geophys. Res. Lett.*, 44, 2481–2492, doi:10.1002/2016GL072308
 18. Levine, A. F. Z., F.-F. Jin, and **M. F. Stuecker** (2017), A simple approach to quantifying the noise-

- ENSO interaction. Part II: the role of coupling between the warm Pool and equatorial zonal wind anomalies, *Clim Dyn*, 48, 19–37, doi:10.1007/s00382-016-3268-3
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 16. Zhang, W., F.-F. Jin, **M. F. Stuecker**, A. T. Wittenberg, A. Timmermann, H.-L. Ren, J.-S. Kug, W. Cai, and M. Cane (2016), Unraveling El Niño’s Impact on the East Asian Monsoon and Yangtze River Summer Flooding, *Geophys. Res. Lett.*, 43, 11375–11382, doi:10.1002/2016GL071190
 15. **Stuecker, M. F.**, F.-F. Jin, A. Timmermann, and S. McGregor (2016), Reply to “Comments on ‘Combination Mode Dynamics of the Anomalous Northwest Pacific Anticyclone’”, *J. Climate*, 29, 4695–4706, doi:10.1175/JCLI-D-15-0558.1
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 11. Zhang, W., Y. Wang, F.-F. Jin, **M. F. Stuecker**, and A. G. Turner (2015), Impact of different El Niño types on the El Niño/IOD relationship, *Geophys. Res. Lett.*, 42, 8570–8576
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 9. Zhang, W., H. Li, F.-F. Jin, **M. F. Stuecker**, A. G. Turner, and N. Klingaman (2015), The Annual-Cycle Modulation of Meridional Asymmetry in ENSO’s Atmospheric Response and Its Dependence on ENSO Zonal Structure, *J. Climate*, 28, 5795–5812, doi:10.1175/JCLI-D-14-00724.1
 8. **Stuecker, M. F.**, F.-F. Jin, A. Timmermann, and S. McGregor (2015), Combination Mode Dynamics of the Anomalous Northwest Pacific Anticyclone, *J. Climate*, 28, 1093–1111, doi:10.1175/JCLI-D-14-00225.1
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 6. Stein, K., A. Timmermann, N. Schneider, F.-F. Jin, and **M. F. Stuecker** (2014), ENSO seasonal synchronization theory, *J. Climate*, 27, 5285–5310, doi:<http://dx.doi.org/10.1175/JCLI-D-13-00525.1>
 5. Widlansky, M., A. Timmermann, S. McGregor, **M. F. Stuecker**, and W. Cai (2014), An inter hemispheric tropical sea level seesaw due to El Niño Taimasa, *J. Climate*, 27, 1070–1081, doi:10.1175/JCLI-D-13-00276.1
 4. Ren, H.-L., F.-F. Jin, **M. F. Stuecker**, and R. Xie (2013), ENSO Regime Change since the Late 1970s as Manifested by Two Types of ENSO, *Journal of the Meteorological Society of Japan*, 91, 835–842, doi:10.2151/jmsj.2013-608
 3. **Stuecker, M. F.**, A. Timmermann, F.-F. Jin, S. McGregor, and H.-L. Ren (2013), A Combination Mode of Annual Cycle and the El Niño - Southern Oscillation, *Nature Geoscience*, 6, 540–544, doi:10.1038/ngeo1826
 2. McGregor, S., A. Timmermann, N. Schneider, **M. F. Stuecker**, and M. H. England (2012), The effect of the South Pacific Convergence Zone on the termination of El Niño events and the meridional asymmetry of ENSO, *J. Climate*, 25, 5566–5586, doi:10.1175/JCLI-D-11-00332.1
 1. **Stuecker, M. F.**, and R. E. Zeebe (2010), Ocean chemistry and atmospheric CO₂ sensitivity to carbon perturbations throughout the Cenozoic, *Geophys. Res. Lett.*, 37, L03609

Peer-reviewed book and report chapters

4. Lee, J.-Y., J. Marotzke, G. Bala, L. Cao, S. Corti, J. P. Dunne, F. Engelbrecht, E. Fischer, J. C. Fyfe, C. Jones, A. Maycock, J. Mutemi, O. Ndiaye, S. Panickal, T. Zhou (2021), Future Global Climate: Scenario-Based Projections and Near-Term Information. In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)]. Cambridge University Press. [Contributing Authors: K. Armour, N. Bellouin, I. Bethke, M. Byrne, C. Cassou, D. Chen, A. Cherchi, H. Christensen, S. Connors, A. Diluca, S. Drijfhout, C. G. Fletcher, P. Forster, J. Garcia-Serra, N. P. Gillett, D. S. Kaufmann, D. P. Keller, B. Kravitz, H. Li, Y. Liang, A. MacDougall, E. Malinina, M. Menary, W. Merryfield, S. Milinski, S.-K. Min, Z. Nicholls, D. Notz, B. Pearson, M. Priestley, J. Quaas, A. Ribes, A. C. Ruane, J.-B. Sallee, E. Sanchez-Gomez, S. I. Seneviratne, A. Slanger, C. Smith, **M. F. Stuecker**, R. Swaminathan, P. W. Thorne, K. B. Tokarska, M. Toohey, A. Turner, D. Volpi, C. Xiao, K.-S. Yun, and G. Zappa]
3. Karamperidou, C., **M. F. Stuecker**, A. Timmermann, K.-S. Yun, S.-S. Lee, F.-F. Jin, A. Santoso, M. J. McPhaden, and W. Cai (2020), ENSO in a Changing Climate: Challenges, Paleo-Perspectives, and Outlook. In *El Niño Southern Oscillation in a Changing Climate* (eds M. J. McPhaden, A. Santoso, and W. Cai), doi:10.1002/9781119548164.ch21
2. Taschetto, A. S., C. C. Ummenhofer, **M. F. Stuecker**, D. Dommenget, K. Ashok, R. R. Rodrigues, and S.-W. Yeh (2020), ENSO Atmospheric teleconnections. In *El Niño Southern Oscillation in a Changing Climate* (eds M. J. McPhaden, A. Santoso, and W. Cai), doi:10.1002/9781119548164.ch14
1. Jin, F.-F., H.-C. Chen, S. Zhao, M. Hayashi, C. Karamperidou, **M. F. Stuecker**, R. Xie, and L. Geng (2020), Simple ENSO Models. In *El Niño Southern Oscillation in a Changing Climate* (eds M. J. McPhaden, A. Santoso, and W. Cai), doi:10.1002/9781119548164.ch6

Publications only reviewed by editor

3. Amaya, D. J., M. G. Jacox, M. R. Fewings, V. S. Saba, **M. F. Stuecker**, R. R. Rykaczewski, A. C. Ross, C. A. Stock, A. Capotondi, C. M. Petrik, S. J. Bograd, M. A. Alexander, W. Cheng, A. J. Hermann, K. A. Kearney, and B. S. Powell (2023), Marine heatwaves need clear definitions so coastal communities can adapt, *Nature*, *in press*
2. **Stuecker, M. F.** (2021), New insights into future tropical climate change, *Nature Climate Change*, doi:10.1038/s41558-021-01107-5
1. Chen, N., S. Thual, and **M. F. Stuecker** (2019), El Niño and the Southern Oscillation: Theory, *Elsevier Reference Module in Earth Systems and Environmental Sciences (ESES)*

Presentations

Invited Seminar Talks

21. **GEOMAR Helmholtz Centre for Ocean Research Kiel** (Germany; virtual), 01/2023
20. **IBS Center for Climate Physics (ICCP)** (South Korea), 11/2022
19. **George Mason University**, Department of Atmospheric, Oceanic & Earth Sciences (USA), 10/2021 (virtual)
18. **National Taiwan University** (Taiwan), 11/2019
17. **Imperial College London** (UK), 07/2019
16. **University of Hawai'i at Mānoa**, Department of Oceanography (USA), 04/2019
15. **Ulsan National Institute for Science and Technology (UNIST)** (South Korea), 03/2019
14. **Chonbuk National University** (South Korea), 11/2018

13. **New York University**, Courant Institute of Mathematical Sciences (USA), 04/2017
12. **Pohang University of Science and Technology (POSTECH)** (South Korea), 03/2017
11. **Ulsan National Institute for Science and Technology (UNIST)** (South Korea), 03/2017
10. **IBS Center for Climate Physics (ICCP)** (South Korea), 02/2017
9. **China Meteorological Administration** (China), 07/2016
8. **Max-Planck-Institute for Meteorology** (Germany), 04/2016
7. **University of Bergen**, Bjerknes Centre for Climate Research (Norway), 10/2015
6. **Columbia University**, Lamont-Doherty Earth Observatory (USA), 09/2015
5. **Geophysical Fluid Dynamics Laboratory (GFDL)** (USA), 08/2015
4. **University of Tokyo**, Atmosphere and Ocean Research Institute (Japan), 06/2015
3. **University of Tokyo**, Research Center for Advanced Science and Technology (Japan), 06/2015
2. **University of New South Wales**, Climate Change Research Centre (Australia), 02/2015
1. **University of Bergen**, Bjerknes Centre for Climate Research (Norway), 09/2013

Invited Oral Conference and Workshop Presentations

14. New perspectives on El Niño's central role in the global climate system, IUGG General Assembly, Berlin, Germany, 07/2023 (**invited award talk**)
13. The Climate Trio: stochastic climate variability, seasonal cycle, and El Niño, Dynamics Days Asia Pacific (DDAP12), Daejeon, South Korea, 11/2022 (**invited talk**)
12. Mechanisms of regional climate change: Demonstrating a strong control of future equatorial warming by off-equatorial forcing, AOGS annual meeting, Singapore, 08/2021 (**Kamide Lecture**)
11. Model biases and tropical Pacific climate change, Workshop "Towards more reliable regional climate projections", virtual, 06/2021 (**invited talk**)
10. Interactions between the tropical Pacific climate mean state and its variability, virtual Physical Oceanography Graduate Student (POGS) Symposium, 01/2021 (**invited talk**)
9. What lead to the unprecedented low Antarctic sea ice extent during the 2016 austral spring season?, AMOS-ICTMO 2019, Darwin, Australia, 06/2019 (**invited talk**)
8. Tropospheric Biennial Oscillation (TBO) indistinguishable from white noise, 14th East Asian Climate (EAC) workshop, Hong Kong, China, 04/2019 (**invited talk**)
7. A hierarchy of climate models to explain the observed modes of Indo-Pacific climate variability, Workshop on Interactions between Indo-Pacific Ocean and Asian Monsoon, Honolulu, USA, 06/2018, (**invited talk**)
6. Revisiting the interpretation of lead/lag correlations as exemplified by the relationship between ENSO and the Indian Ocean Dipole, Tropical interbasin interactions workshop, Xiamen, China, 01/2018, (**invited talk**)
5. Seasonal ENSO dynamics, teleconnections and predictability, ENSO complexity workshop, ICCP, South Korea, 10/2017 (**invited 30 min talk**)
4. ENSO as a potential source for global seasonal climate predictability: From Yangtze River flooding events to Indian Ocean Dipole variability to the 2016 extreme low Antarctic sea ice extent, 16th CTWF International Symposium on Advances in Seasonal to Decadal Prediction, Beijing, China, 09/2017 (**invited 30 min talk**)
3. Interconnected climate variability in the Pacific and Indian Oceans, SIAM Conference on Applications of Dynamical Systems, Snowbird, USA, 05/2017 (**invited mini symposium talk**)
2. The El Niño-Southern Oscillation Frequency Cascade, EGU General Assembly, Vienna, Austria, 04/2016 (**invited talk within the CL division meeting for the Outstanding Young Scientist Award**)
1. Mathematical peculiarities of El Niño, Mathematics and Climate Research Network (MCRN) annual meeting, Chapel Hill, North Carolina, USA, 09/2014 (**invited talk**)

Contributed Oral Conference and Workshop Presentations

32. Explainable El Niño predictability from climate mode interactions, Ocean Sciences Meeting, New Orleans, USA, 02/2024
31. Revisiting the Pacific Meridional Mode - cause or effect in the El Niño-Southern Oscillation?, IUGG General Assembly, Berlin, Germany, 07/2023
30. An El Niño-centric view of interannual tropical basin interactions, CLIVAR workshop on the tropical Pacific and its interbasin interaction, Melbourne, Australia, 02/2023
29. An El Niño-centric view of interannual tropical basin interactions, Joint IPRC-JAMSTEC JIcore workshop, Yokohama, Japan, 02/2023
28. The Pacific Meridional Mode - Cause or Effect in the El Niño-Southern Oscillation?, IRCC-KIST-IPRC Joint Workshop on Climate Change and Prediction, East West Center, Honolulu, 01/2023
27. New perspectives on El Niño's central role in the global climate system, AGU fall meeting, Chicago, 12/2022
26. The role of nonlinear dynamical heating for decadal variability in the tropical Central Pacific, Tropical Pacific Decadal Variability CLIVAR working group webinar, 09/2022
25. Towards defining null hypotheses for trans basin interactions, CLIVAR TBI conceptual models group webinar, 06/2022
24. Non-Local Controls of Tropical Warming, SIO-UH Oahu Workshop on Ocean-Atmosphere Interactions and Climate Predictability, 03/2022
23. Equatorial/Off-equatorial climate connectivity via coupled Hadley-STC-cloud feedback, Tropical Pacific Decadal Variability CLIVAR working group webinar, 11/2021
22. Mechanisms that contribute to ENSO seasonal synchronization, ENSO conceptual models CLIVAR working group webinar, 11/2020
21. Equatorial warming dominated by off-equatorial forcing, CFMIP 2019 meeting, Mykonos, Greece, 09/2019
20. Polar amplification dominated by local forcing and feedbacks, NOAA summer institute, Steamboat Springs, USA, 07/2019
19. Polar amplification dominated by local forcing and feedbacks, Polar Amplification Model Inter-comparison Project (PAMIP) workshop, Totnes, UK, 06/2019
18. Roles of local and remote forcing and feedbacks for equatorial warming, East Asian workshop on Climate Dynamics, Busan, South Korea, 05/2019
17. The relationship between the Pacific Meridional Mode, Central Pacific ENSO, and Pacific decadal variability, CSHOR ENSO symposium, Hobart, Australia, 01/2019
16. Local processes dominate over remote processes in polar amplification, AGU Fall Meeting, Washington D.C., USA, 12/2018
15. Quantifying the role of local and remote processes in polar amplification, KMS fall meeting 2018, Jeju island, South Korea, 10/2018
14. Quantifying the role of local and remote processes in polar amplification, CFMIP 2018 meeting, Boulder, USA, 10/2018
13. Revisiting the Pacific Meridional Mode, AOGS annual meeting, Honolulu, USA, 06/2018
12. Tropical trans-basin variability, Using past observations to constrain future climate variability and change workshop, University of Washington, Seattle, USA, 02/2018
11. Cause of the unprecedented low Antarctic sea ice extent during the 2016 austral spring season, sea ice prediction workshop, University of Washington, Seattle, USA, 07/2017
10. El Niño And The East Asian Monsoon: Unraveling The Roles Of The Annual Cycle And Air/Sea Interactions, AGU Fall Meeting, San Francisco, USA, 12/2016
9. Tropospheric Biennial Oscillation (TBO) indistinguishable from white noise, EGU General Assembly, Vienna, Austria, 04/2016
8. The El Niño-Southern Oscillation Frequency Cascade, AMS 96th Annual Meeting, New Orleans, USA, 01/2016

7. Tropospheric Biennial Oscillation (TBO) indistinguishable from white noise, AMS 96th Annual Meeting, New Orleans, USA, 01/2016
6. Combination Mode Dynamics of the Indo-Pacific Response to the El Niño-Southern Oscillation, AOGS annual meeting, Sapporo, Japan, 07/2014
5. Combination Mode of Annual Cycle and the El Niño - Southern Oscillation: Genesis, Impacts and attribution of air/sea coupling, Ocean Sciences Meeting, Honolulu, USA, 02/2014
4. Combination Mode of Annual Cycle and the El Niño - Southern Oscillation, Tropical Weather and Climate Dynamics (TWCD) Workshop in Honolulu, USA, 10/2013
3. A Combination Mode of Annual Cycle and the El Niño - Southern Oscillation, Third CLIVAR Workshop on the Evaluation of ENSO Processes in Climate Models, Hobart, Australia, 01/2013
2. The role of atmospheric nonlinearity in the phase-transition of ENSO, Summer Workshop on ENSO at the University of Hawai'i at Mānoa, USA, 06/2012
1. The impact of the South Pacific Convergence Zone on the phase transition of ENSO - Insights from CGCM results, 10th International Conference on Southern Hemisphere Meteorology and Oceanography (ICSHMO10), New Caledonia, 04/2012

Poster Presentations

12. Dynamics for El Niño-La Niña asymmetry constrain equatorial-Pacific warming pattern, The Pattern Effect: Coupling of SST Patterns, Radiative Feedbacks, and Climate Sensitivity Workshop, Boulder, USA, 05/2022
11. Delineating local coupled feedbacks and remote drivers using a Green's function approach in the coupled climate system, The Pattern Effect: Coupling of SST Patterns, Radiative Feedbacks, and Climate Sensitivity Workshop, Boulder, USA, 05/2022
10. Conditions leading to the unprecedented low Antarctic sea ice extent during the 2016 austral spring season, Ocean Sciences Meeting, Portland, USA, 02/2018
9. Cause of the unprecedented low Antarctic sea ice extent during the 2016 austral spring season, AGU Fall Meeting, New Orleans, USA, 12/2017
8. El Niño And The East Asian Monsoon: Unraveling The Roles Of The Annual Cycle And Air/Sea Interactions, AMS 97th Annual Meeting, Seattle, USA, 01/2017
7. The ENSO frequency cascade, AOGS annual meeting, Beijing, China, 08/2016
6. Tropospheric Biennial Oscillation (TBO) indistinguishable from white noise, AOGS annual meeting, Beijing, China, 08/2016
5. El Niño-Southern Oscillation frequency cascade, EGU General Assembly, Vienna, Austria, 04/2016 (**Outstanding Student Poster and PICO (OSPP) Award**)
4. A new framework explaining linkages between ENSO and the Monsoon, Monsoons and the ITCZ: the annual cycle in the Holocene and the future workshop at Columbia University, New York, USA, 09/2015
3. New insights in the genesis and persistence of the anomalous low-level North-West Pacific Anti-cyclone, ENSO workshop at the University of New South Wales, Sydney, Australia, 02/2015 (**Best Student Presentation Award**)
2. A combination mode of annual cycle and the El Niño-Southern Oscillation: Genesis, impacts and attribution of air/sea coupling, The Latsis Symposium 2014: Atmosphere and Climate Dynamics, Zuerich, Switzerland, 06/2014
1. Evidence for combination tones between the El Niño-Southern Oscillation and the Annual Cycle, AGU Fall Meeting, San Francisco, USA, 12/2012

Campus or Departmental Talks

9. University of Hawai'i at Mānoa, Department of Oceanography (USA), 11/2022
8. University of Hawai'i at Mānoa, Department of Atmospheric Sciences (USA), 09/2021

7. IBS Center for Climate Physics (ICCP) (South Korea), 07/2018
6. University of Washington, School of Oceanography (USA), 04/2017
5. University of Washington, Department of Atmospheric Sciences (USA), 01/2017
4. University of Hawai'i at Mānoa, Department of Atmospheric Sciences (USA), 05/2016
3. University of Hawai'i at Mānoa, Department of Atmospheric Sciences (USA), 11/2015
2. University of Hawai'i at Mānoa, Department of Meteorology (USA), 12/2014
1. University of Hawai'i at Mānoa, Department of Meteorology (USA), 4/2012

Mentorship & Advising

Mentored and supported postdocs and researchers

2024	Naoya Takahashi (UH, Postdoctoral Researcher)
2021–Present	Sen Zhao (UH, Assistant Researcher)
2019	Christian Wengel (ICCP, Postdoc)
2018–2019	In-Won Kim (ICCP, Postdoc)
2018–2019	Joaquin Blanco (ICCP, Postdoc)

PhD advisees (UH)

Spring 2023–Present	Hillary Beckmeyer (UH, Oceanography)
Nov 2022–Feb 2024	Dianne Deauna (UH, Oceanography, co-advised with Sloan Coats)
Fall 2020–Present	Jacob Gunnarson (UH, Oceanography)

PhD dissertation committees

2023–Present	Jacob Gunnarson (UH, Oceanography)
2023–Present	Hyuna Kim (Pusan National University, South Korea)
2022–Present	A K M Nahid Hasan (Utah State University)
2022–Present	Lucas Ellison (UH, Earth Sciences)
2022–Present	Kate Feloy (UH, Oceanography)
2021–2024	Dianne Deauna (UH, Oceanography)
2019–2022 (defended)	Doyeon Kim (Ulsan National Institute of Science and Technology (UNIST), South Korea)
2019–2021 (defended)	Yechul Shin (Ulsan National Institute of Science and Technology (UNIST), South Korea)

MS thesis committees

2024	Vera Stockmayer (Kiel University, Germany)
2023–Present	Carla Baizeau (UH, Oceanography)
2022–2023 (defended)	Corinne Hite (UH, Oceanography)
2021–Present	Stacey Naeemullah (UH, Oceanography)
2021–2022 (defended)	Lintong Cai (UH, Atmospheric Sciences)
2021–2022 (defended)	Bailey Donaldson (UH, Oceanography)

PhD comprehensive exam committees

2023	Gordon Walker (UH, Oceanography), Nicolas Storie (UH, Oceanography), Jacob Gunnarson (UH, Oceanography), Michaela Setzer (UH, Oceanography)
2022	Lucas Ellison (UH, Earth Sciences)
2021	Kate Feloy (UH, Oceanography)
2020	Xinyi Yang (UH, Atmospheric Sciences)

Visiting graduate students

2024	Vera Stockmayer (Kiel University, Germany)
2022	Lisa Maillard (University of Toulouse, France)

UH Oceanography interim graduate student advisory committees

Jacob Gunnarson, Gina Selig, Nicolas Vanderzyl, Corinne Hite, Kira Fish, Carla Baizeau, Zachary Nachod, Margaret Bradley, Hillary Beckmeyer

Informally mentored students

Xin Geng (NUIST, China), Kiwoong Park (UNIST, South Korea), Chao Liu (NUIST, China), Feng Jiang (NUIST, China), So-Won Park (POSTECH, South Korea), Zhiyu Li (NUIST, China), Yu Zhang (Ocean University of China, China)

Courses taught at UH Mānoa (2020 – Present)

- Sustainability in a changing world (OCN105/SUST115)
- Communicating Climate Change through Graphic Design (OCN199)
- Large-Scale Ocean-Atmosphere Interaction (OCN666/ATMO666)
- Directed Research (OCN699)
- Seminar (OCN780)

Previous Teaching

Instructor: "Advanced Geophysical Fluid Dynamics" (graduate class), Pusan National University spring semester 2019, South Korea

Instructor: "Short CESM summer school", 2018 summer school at Pusan National University, South Korea, 08/2018

Instructor and Co-Organizer: "The Ocean's role in climate", 2018 summer school at Pusan National University, South Korea, 07/2018

Guest Lecturer: "Exploring the Atmospheric Sciences" (ATMS 220), University of Washington summer quarter 2017 and fall quarter 2017

Guest Lecturer: "Climate Modeling" (ATM S 559), University of Washington spring quarter 2017, Instructor: Cecilia Bitz

Guest Lecturer: invited guest lecture in special topics graduate course on ENSO dynamics, Pusan National University (PNU) spring semester 2017, Instructor: June-Yi Lee

Guest Lecturer: "Climate modeling, Data Analysis and Applications (ATMO 752)", UH Mānoa fall semester 2016, Instructor: Christina Karamperidou

Instructor: tutorials on "Geospatial data analysis with Ferret" during MCRN annual meeting (09/2014) and ACDC summer school (08/2013)

Assistant Teacher (full-time): special education school for the blind and visually impaired (von-Vincke-Schule), Germany, 09/2001–07/2002

Service: UH Mānoa

Department of Oceanography: Microbial Oceanographer faculty search committee (2023 – 2024)

Department of Oceanography: Uehiro faculty search committee (two positions; 2022 – 2023)

Department of Oceanography: Graduate student recruitment committee (2020 – Present)

Department of Oceanography: Department representative at University of Hawai'i at Mānoa Virtual Graduate Schools Fair (12/2020)

IPRC: Organizer of IPRC Climate Seminar series (2021 – Present)

SOEST: Research Council member (2022 – Present)

SOEST: Discussion Group member on SOEST-wide climate degree (2022 – Present)

SOEST: Student recruitment committee (2020 – Present)

UH Mānoa: Foundations Board member (2021 – 2024), co-chair: Fall 2022 and Spring 2023

Service: Professional & Leadership

Core Leadership Group: CLIVAR-CFMIP working group: TROpical PacIfiC SST Warming PatternS (TROPICS; 2023 – Present)

Member: CLIVAR working group: Tropical Pacific Decadal Variability (2021 – Present)

Member: CLIVAR research focus: Tropical basin interaction (2020 – Present)

Member: CLIVAR working group: ENSO conceptual models (2020 – Present)

Member: NOAA MAPP Projections Task Force (2023 – Present)

Member: NOAA CVP/MAPP Coastal Inundation Task Force (2023 – Present)

Member: NOAA MAPP Marine Ecosystem Task Force (2020 – 2023)

Member: JAMSTEC-IPRC Research Cooperation (JICore) project (2021 – 2024)

IPCC Contributing Author for the Sixth Assessment Report (AR6), Working Group I, Chapter 4 (2019 – 2021)

Chair/Co-Chair - Scientific Organizing Committee:

Wyrkti Symposium in Honolulu (to be held in 2025)

IRCC-KIST-IPRC Joint Workshop on Climate Change and Prediction at the East West Center in Honolulu (01/2023)

SIO-UH Oahu Workshop on Ocean-Atmosphere Interactions and Climate Predictability (03/2022)

2nd ICCP CESM2 Large Ensemble workshop (02/2021; virtual)

1st ICCP CESM2 Large Ensemble workshop (11/2020; virtual)

"East Asian workshop on Climate Dynamics" at ICCP in South Korea (05/2019)

Member - Scientific Organizing Committee:

ENSO summer school in Honolulu (to be held in 2025; ex-officio member)

WCRP-CLIVAR Workshop on Climate Interactions among the Tropical Basins (02/2021; virtual)

PCC workshop at the University of Washington "Using past observations to constrain future climate variability and change" (02/2018)

Member - Local Organizing Committee:

ENSO workshop at the University of Hawai'i at Mānoa (06/2012)

Session Convener:

Tropical Pacific Climate Variability and Change: Dynamics, Teleconnections, Impacts, and Projections (AOGS 2024)

Tropical Pacific Climate Variability: dynamics, teleconnections, impacts, and projections (AUG 2023)

El Niño complexity and change (AOGS 2022)

Toward Predictive Understanding of Pacific Decadal Variability and its Global Implications (Ocean Sciences Meeting 2022)

El Niño in a changing climate (Ocean Sciences Meeting 2022)

Subtropical Air-Sea Interaction (Ocean Sciences Meeting 2022)

Tropical inter-basin interaction: processes, pathways and predictability (AGU 2020)

Atmospheric Teleconnections From The Equatorial Pacific: 50 Years of Progress on The Role of Tropical Oceans In Climate and Its Predictability (AGU 2019)

El Niño complexity and change (AOGS 2018)

ENSO dynamics, observations, and predictability in light of the recent 2015/16 El Niño (AGU 2016)

Dynamics, Prediction, Impacts and Changes of ENSO (AOGS 2016)

Session Chair:

ENSO and climate change session (CLIVAR workshop on the tropical Pacific and its interbasin interaction 2023)

ENSO-TBI plenary session (CLIVAR workshop on the tropical Pacific and its interbasin interaction 2023)

El Niño-Southern Oscillation: Impact (IRCC-KIST-IPRC Joint Workshop on Climate Change and Prediction 2023)

Subtropical Air-Sea Interaction (Ocean Sciences Meeting 2022)

El Niño in a changing climate (Ocean Sciences Meeting 2022)

Tropical inter-basin interaction: processes, pathways and predictability (AGU 2020)

Advances in Climate Physics: From Paleoclimate to Future Climate (KMS fall meeting 2018)

El Niño complexity and change (AOGS 2018)

Decadal Variability and Predictability (AMS 2017)

ENSO dynamics, observations, and predictability in light of the recent 2015/16 El Niño (AGU 2016)

Dynamics, Prediction, Impacts and Changes of ENSO (AOGS 2016)

Member and contributor: in the Mathematics and Climate Research Network (MCRN): facilitating collaborations between climate scientists and mathematicians, giving talks, organizing a "hackathon", 2014 – 2016

Proposal Reviewer: National Science Foundation

Journal Reviewer: Nature, Nature Geoscience, Nature Climate Change, Nature Communications, Proceedings of the National Academy of Sciences of the United States of America, Bulletin of the American Meteorological Society, Scientific Reports, Geophysical Research Letters, Environmental Research Letters, Journal of Climate, Journal of Geophysical Research - Atmospheres, Journal of Geophysical Research - Oceans, Climate Dynamics, Theoretical and Applied Climatology, Wiley AGU Books

Fellowship Reviewer: East-West Center Graduate Degree Fellowship

Research highlighted by Journals and Editors

Nature Climate Change News & Views article "Local processes with a global reach" (P. Taylor), 2018

AGU EOS Research Spotlight: "New Modeling Framework Improves Radiative Feedback Estimates", 2018

AGU Editor's Highlight: "Record-low 2016 Antarctic sea ice due to 'perfect storm' of tropical, polar conditions", 2017

AGU Editor's Highlight: "Revisiting ENSO/Indian Ocean Dipole phase relationships", 2017

Service: Outreach via Press Interviews

Interview with New Scientist (Article: "Something strange is happening in the Pacific and we must find out why"; August 1, 2023)

Interview with Hawaii News Now Sunrise show about climate change and impacts on Hawaii (live airing date: December 28, 2021)

Interview with Hawaii Public Radio about future El Niño changes (airing date: August 27, 2021)

Interview with Ka Pili Kai magazine (Volume 3, Number 2, 2021)

Interview with Earther (7. May 2020; Article: "An Ancient Type of El Niño Could Awaken Because of Climate Change" by Dharna Noor)

Interview with The Maui News (24. January 2020; Article: "Hotter, brighter days up ahead UH professor offers" by Dakota Grossman)

Interview with Radio Ecoshock about polar climate change (Airing date: January 2019; 24 minutes)

Interview with Radio New Zealand about El Niño predictability and impacts (Airing date: 25. July 2013; 20 minutes)

Service: Education and Community Outreach

Outreach Talk: El Niño and sea level variability, Pacific International Training Desk Webinar Series, 10/2020

Outreach Talk: El Niño - the climate child of the Pacific, Busan National Science Museum, South Korea, 09/2018

Outreach Volunteer: SOEST open house science demonstrations ("Weather in a tank") - 10/2013; SOEST open house: green screen demonstrations - 10/2015; ClimateSnack Blog contributing author; ClimateFeedback.org contributing reviewer

Outreach Consultant: Scientific advise for general audience science publications: "Das Ozean Buch"/"The Ocean Book" by Esther Gonstalla, published in German, English, and Korean; "Das Eisbuch" by Esther Gonstalla, published in German.

Other Academic and Professional Activities

Participant: NOAA fellowship summer institute, Steamboat Springs, Colorado, 07/2022

Guest: 2021 UCAR Annual Members Meeting, 10/2021

Invited Participant: STS forum (Science and Technology in Society forum), *virtual meeting*, 10/2021

Participant: ENSO in Large Ensembles workshop at the University of Colorado in Boulder, 08/2021

Participant: Workshop on JAMSTEC-IPRC Collaborative Research (JICore), *virtual meeting*, 02/2021

Invited Participant: STS forum (Science and Technology in Society forum), *virtual meeting*, 10/2020

Participant: NOAA fellowship summer institute, Steamboat Springs, Colorado, 07/2019

Invited Fellow: STS forum (Science and Technology in Society forum) Future Leaders Program fellow, Kyoto, Japan, 10/2018

Participant: Workshop: Pan-tropical inter-basin climate interactions, Jeju Island, South Korea, 08/2018

Participant: PCC Summer Institute: "Population Health and Climate Change", Friday Harbor, USA, 09/2017

Participant: STATMOS/SAMSI workshop on climate statistics at NCAR, Boulder, USA, 07/2017

Participant: Mathematics and Climate Research Network (MCRN) annual meeting in Philadelphia, USA, 09/2016

Participant: Mathematics and Climate Research Network (MCRN) annual meeting in Chapel Hill, USA, 09/2014

Participant: Sustainable Climate Risk Management (SCRiM) summer school at Penn state University, USA, 08/2014

Participant: Alpine summer school "Dynamics, Stochastics and Predictability of the Climate System" in Valsavarenche, Italy, 06/2014

Participant: Advanced Climate Dynamics Course (ACDC) "Dynamics of the Last Deglaciation" in Nyksund, Norway, 08/2013

Participant: NCAR Community Earth System Model tutorial in Boulder, USA, 07/2012

Current and Past Engagement in the following Professional Societies & Associations

American Geophysical Union (AGU), Asia Oceania Geosciences Society (AOGS), European Geosciences Union (EGU), American Meteorological Society (AMS), Mathematics and Climate Research Network (MCRN)

Last updated: March 5, 2024