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### **Education**

Ph.D. in Mathematics and Atmospheric and Ocean Sciences, 2010  
Courant Institute of Mathematical Sciences, New York University, New York, NY

M.S. in Applied and Computational Mathematics, 2005  
Instituto de Matematica Pura e Aplicada (IMPA), Rio de Janeiro, Brazil

B.S. in Civil Engineering, 2003  
Universidade de Sao Paulo, Sao Paulo, Brazil

### **Appointments**

Chief, Atmosphere-Ocean Processes and Predictability Division  
Supervisory Physical Scientist, Physical Sciences Laboratory, NOAA, 2024-present

Research Physical Scientist, Physical Sciences Laboratory, NOAA, 2019-2024

Research Scientist, Cooperative Institute for Research in Environmental Sciences (CIRES),  
University of Colorado at the NOAA Physical Sciences Laboratory, Boulder, 2014 - 2018.

Post-doctoral Fellow, NOAA Earth System Research Laboratory, Boulder CO (National  
Research Council Program & CIRES Postdoctoral Visiting Fellowships), 2010-2013

### **Professional Activities**

NOAA Precipitation Prediction Grand Challenge Implementation Team Membership (2024-  
present)

Organizer and Lecturer at Summer School on Theory, Mechanisms and Hierarchical  
Modelling of Climate Dynamics: Convection and Clouds International Centre for Theoretical  
Physics, Italy (2024)

US Climate Variability and Predictability Program (CLIVAR): member of Process Study and  
Model Improvement Panel (2023-2026)

NOAA Seasonal Forecast System Development Plan: team member (2023)

Fellow at the Transregional Collaborative Research Center "Waves to Weather", Germany  
(2023)

NOAA Office of Oceanic and Atmospheric Research (OAR) CPO/MAPP Marine Ecosystems  
Task Force: co-lead (2020-2023)

AGU Journal of Advances in Modeling Earth Systems: Associate Editor (2018-2023)

Program chair for the American Meteorological Society (AMS) 8th & 9th Symposium on the  
Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability (2020, 2021).

ATOMIC PSL NOAA Weather briefings organizer during the field campaign (Jan/Feb 2020)

AMS Conference on Atmospheric and Oceanic Fluid Dynamics (AOFD): committee member  
(2012 - 2019) and meeting organizer (2017 & 2019)

National Research Council (NRC): member of the review panel for the NRC graduate  
postdoctoral and visiting scientists' fellowships (2015 - 2019)

Research Experience for Community College Students (NSF EAR #1757930): mentor for community college students (2017 – 2019)

Significant Opportunities in Atmospheric Research and Science (NSF #1120459): mentor for summer undergraduate students that are under-represented in sciences (2016-2017)

AMS Monthly Weather Review: Associate Editor (2013-2016).

### **Diversity and Inclusion Activities**

NOAA OAR Diversity and Inclusion Advisory Committee (ODIAC): member (2020-2023)

AMS AOFD Inclusion and Diversity Happy Hour organizer (2019)

AMS AOFD Women's luncheon organizer (2017)

### **Honors and Awards**

NOAA OAR EEO/Diversity Award for Exemplary Service with the OAR Diversity and Inclusion Advisory Committee (ODIAC), 2022

QJRMS Editor's Award in recognition of a significant contribution to the journal or editorial process, 2014

National Research Council Research Associateship Award, 2011-2013.

Cooperative Institute for Research in Environmental Sciences Visiting Fellows Program, 2010-2011.

Dean's Dissertation Fellowship, NYU Graduate School of Arts and Sciences, 2009-2010.

Outstanding Oral Presentation, 17th Conf. on Atmospheric and Oceanic Fluid Dynamics, 2009.

Henry MacCracken Fellowship, NYU Graduate School of Arts and Sciences, 2005-2008.

IMPA Graduate Research Fellowship, Master Fellowship from CNPq (Brazilian Governmental Agency), 2003-2004.

### **Publications**

Gehne, M. J. Dias, J. D. Scott, D. J. Amaya, M. G., Jacox, M. A. Alexander, A. Cluett: Influence of Atmospheric Errors on Weeks 2-4 California Current System predictions, (*Geophys. Res. Lett.*, submitted)

Wolding, B., J. **Dias**, M. Gehne, G. Kiladis, F. Ahmed, K. Schiro, and A. Adames: Plume model assessment of the convective coupling of equatorial waves, (*J. Atmos. Sci.*, submitted)

Kiladis, G. N., J. R. Albers, and J. **Dias**: Dependence of the structure of stratospheric Kelvin and mixed Rossby-gravity waves on the basic state flow. (*J. Atmos. Sci.*, submitted).

Bengtsson, L., S. N. Tulich, J. **Dias**, B. Wolding, K.J.C. Hall, M. Gehne, G. N. Kiladis, and P. Pegion: The crucial role of the initial state in MJO prediction, (*Geophys. Res. Lett.*, submitted)

Hu, I-K, X. Chen, L. Bengtsson, E. J. Thompson, J. **Dias**, S. N. Tulich: Utilizing ATOMIC observations for assessing marine shallow cumuli in single column models (*JAMES*, submitted)

Chen, X., J. **Dias**, B. Wolding, P. Blossey, C. DeMott, R. Pincus, and E. J. Thompson: Impacts of weak sea surface temperature warm anomalies on trade wind cloudiness in large eddy simulations, (*JAMES*, submitted)

**Dias, J., M. Gehne, G. Kiladis, B. Wolding, and A. Hoell:** Robust multi-decadal variability of Madden-Julian Oscillation amplitude in 20th century, (*Geophys. Res. Lett.*, accepted with revisions)

Amaya D. J., N. Maher, C. Deser, M. G. Jacox, M. A. Alexander, M. Newman, J. **Dias**, and J. Lou: Future changes in seasonal climate predictability. (*J. Climate*, *Accepted*).

**Dias, J., Gehne, M., Kiladis, G. N., & Magnusson, L., 2023:** The role of convectively coupled equatorial waves in sub-seasonal predictions. *Geophys. Res. Lett.*, **50**, e2023GL106198.

Wolding, B., A. Rydbeck, J. **Dias**, F. Ahmed, M. Gehne, G. Kiladis, E. Riley Dellaripa, X. Chen, and I. McCoy, 2024: Atmosphere-Ocean Coupled Energy Budgets of Tropical Convective Discharge-Recharge Cycles. *J. Atmos. Sci.*, **81**, 3–29

Chen, X., J. **Dias**, B. Wolding, R. Pincus, C. DeMott, G. Wick, E. J. Thompson, and C. W. Fairall, 2023: Ubiquitous Sea Surface Temperature Increase Spatial Heterogeneity of Trade-Wind Cloudiness on Daily Timescale. *J. Atmos. Sci.*, **80**, 2969–2987.

Cheng, Y.-M, J. **Dias**, G. N. Kiladis, Z. Feng, L. R. Leung, 2023: Mesoscale convective systems modulated by convectively coupled equatorial waves. *Geophys. Res. Lett.*, **50**, e2023GL103335.

Barpanda, P., S. N. Tulich, J. **Dias**, and G. N. Kiladis, 2023: The Role of Subtropical Rossby Waves in Amplifying the Divergent Circulation of the Madden-Julian Oscillation. *J. Atmos. Sci.*, **80**, 2377–2398

Bengtsson, L., L. Gerard, J. Han, M. Gehne, W. Li, and J. **Dias**, 2022: A Prognostic-Stochastic and Scale-Adaptive Cumulus Convection Closure for Improved Tropical Variability and Convective Gray-Zone Representation in NOAA's Unified Forecast System (UFS). *Mon. Wea. Rev.*, **150**, 3211–3227,

Cheng, Y., S. Tulich, G. N. Kiladis, and J. **Dias**, 2022: Two Extratropical Pathways to Forcing Tropical Convective Disturbances. *J. Climate*, **35**, 2987–3009

Gehne, M., B. Wolding, J. **Dias**, and G. N. Kiladis, 2022: Diagnostics of Tropical Variability for Numerical Weather Forecasts. *Wea. Forecasting*, **37**, 1661–1680

Berrington, A. H., Sakaeda, N., **Dias**, J., & Kiladis, G. N., 2022: Relationships between the eastward propagation of the Madden-Julian Oscillation and its circulation structure. *Journal of Geophysical Research: Atmospheres*, **127**, e2021JD035806.

Knippertz, P., M. Gehne, G. N. Kiladis, K. Kikuchi, A.R. Satheesh, P. E. Roundy, G-Y Yang, N. Žagar, J. **Dias**, A. H. Fink, J. Methven, A. Schlueter, M. C. Wheeler, S. J. Woolnough, 2022: The Intricacies of Identifying Equatorial Waves. *QJRMSS*.

Wang, S., Z. K. Martin, A. H. Sobel, M. K. Tippett, J. **Dias**, and G. N. Kiladis, 2022: A multivariate index for tropical intraseasonal oscillations based on seasonally-varying modal structures. *J. Geophys. Res.-Atmospheres*

Wolding, B., S.W. Powell, F. Ahmed, J. **Dias**, M. Gehne, G. N. Kiladis, 2022: Tropical Thermodynamic-Convection Coupling in Observations and Reanalyses. *J. Atmos. Sci.*

Hsiao, W-T, E. A. Barnes, E. Maloney, S. Tulich, J. **Dias** and G. Kiladis, 2022: Role of the Tropics and its Extratropical Teleconnections in State-Dependent Improvements of U.S. West Coast UFS Precipitation Forecasts. *Geophys. Res. Lett.*

Amaya D. J., M. G. Jacox, J. **Dias**, M. A. Alexander, K. B. Karnauskas, J. D. Scott & M. Gehne, 2022: Subseasonal-to-seasonal forecast skill in the California Current System and its connection to coastal Kelvin waves. *J. Geophys. Res.-Oceans*.

**Dias, J., Tulich, S. N., Gehne, M., & Kiladis, G. N., 2021:** Tropical Origins of Weeks 2–4 Forecast Errors during the Northern Hemisphere Cool Season, *Mon. Weather Rev.*, **149**(9), 2975–2991.

Bengtsson, L., **Dias**, J., Tulich, S., Gehne, M., & Bao, J.-W., 2021: A stochastic parameterization of organized tropical convection using cellular automata for global forecasts in NOAA's

Unified Forecast System. *Journal of Advances in Modeling Earth Systems*, 13, e2020MS002260.

Mayta, V. C., Kiladis, G. N., **Dias**, J., Silva Dias, P. L., & Gehne, M., 2021: Convectively Coupled Kelvin Waves over Tropical South America, *J. Climate*, 34(16), 6531-6547.

Sakaeda, N., **Dias**, J and G. N. Kiladis, 2020: The Unique Characteristics and Potential Mechanisms of the MJO-QBO Relationship *J. Geophys. Res.*

Wolding, B., J. **Dias**, G. N. Kiladis, F. Ahmed, S.W. Powell, E. Maloney, and M. Branson, 2020: Interactions Between Moisture and Tropical Convection. Part I: The Co-Evolution of Moisture and Convection. *J. Atmos. Sci.*, doi: 10.1175/JAS-D-19-0225.1.

Wolding, B., J. **Dias**, G. N. Kiladis, E. Maloney, and M. Branson, 2020: Interactions Between Moisture and Tropical Convection. Part II: The Convective Coupling of Equatorial Waves. *J. Atmos. Sci.*, doi:10.1175/JAS-D-19-0226.1.

Sakaeda, N., G. N. Kiladis and J. **Dias**, J., 2020: The Diurnal Cycle of Rainfall and the Convectively-Coupled Equatorial Waves over the Maritime Continent. *J. Climate*.

Bengtsson, L., J. **Dias**; M. Gehne, P. Bechtold, J. Whitaker, J.-W. Bao, L. Magnusson, S. Michelson, P. Pegion; S. Tulich; G. N. Kiladis, 2019: Convectively coupled equatorial wave simulations using the ECMWF IFS and the NOAA GFS cumulus convection schemes in the NOAA GFS model. *Mon. Weather Rev.*, 147, 4005-4025.

**Dias** J. and G. N. Kiladis, 2019: The Influence of Tropical Forecast Errors on Higher Latitude Predictions. *Geophys. Res. Lett.*, 46, 4450-4459

Kim, Y. -H., G. N. Kiladis, J. R. Albers, J. **Dias**, M. Fujiwara, J. W. Anstey, I. -S. Song, C. J. Wright, Y. Kawatani, F. Lott, and C. Yoo, 2019: Comparison of equatorial wave activity in the tropical tropopause layer and stratosphere represented in reanalysis. *Atmos. Chem. Phys.*, 19, 10027-10050.

**Dias**, J., M. Gehne, G. N. Kiladis, N. Sakaeda, P. Bechtold, and T. Haiden, 2018: Equatorial waves and the skill of NCEP and ECMWF numerical weather prediction systems. *Mon. Wea. Rev.*, 146(6):1763-1784.

Sakaeda N., S. W. Powell, **J. Dias**, G. N. Kiladis: The Diurnal Variability of Precipitating Cloud Populations during DYNAMO, 2018. *J. Atmos. Sci.*, 75(4):1307-1326.

Dole R. and Co-authors, 2018: Advancing Science and Services during the 2015-16 El Nino: The NOAA El Nino Rapid Response Field Campaign. *Bull. Amer. Meteor. Soc.*, 99, 975-1001.

Albers, J. R., J. Perlwitz, A. H. Butler, T. Birner, G. N. Kiladis, Z. D. Lawrence, G. L. Manney, A. O. Langford, and J. **Dias**, 2018. Mechanisms governing interannual variability of stratosphere-to-troposphere ozone transport. *J. Geophys. Res: Atmospheres*, 123(1):234-260.

**Dias**, J., N. Sakaeda, G. N. Kiladis, and K. Kikuchi, 2017: Influences of the MJO on the space-time organization of tropical convection. *J. Geophys. Res.: Atmospheres.*, 122 8012-8032

Kikuchi, K., G. N. Kiladis, J. **Dias**, and T. Nasuno, 2017: Convectively coupled equatorial waves during CINDY/DYNAMO: Slow Kelvin waves as building blocks. *Clim. Dyn.*, 1-20.

Sakaeda, N., G. N. Kiladis, and J. **Dias**, 2017: The diurnal cycle of tropical cloudiness and rainfall associated with the Madden-Julian Oscillation. *J. Climate*, 30, 3999-4020.

Kiladis, G. N., J. **Dias**, and M. Gehne, 2016: The Relationship between equatorial Mixed Rossby-gravity and Eastward Inertio- Gravity waves: Part 1. *J. Atmos. Sci.*, 73, 2123-2145.

**Dias**, J and G. N. Kiladis, 2016: The Relationship between equatorial Mixed Rossby- gravity and Eastward Inertio- Gravity waves: Part 2. *J. Atmos. Sci.*, 73, 2147-2163.

Albers J. R., T. Birner, G. N. Kiladis and J. **Dias**, 2016: Tropical Upper-Tropospheric Potential Vorticity Intrusions during Sudden Stratospheric Warmings. *J. Atmos. Sci.*, 73, 2361-2384.

**Dias, J.**, and G. N. Kiladis, 2014: Influence of the basic state zonal flow on convectively coupled equatorial waves. *Geophys. Res. Lett.*, 41,

Kiladis, G. N., J. **Dias**, K. H. Straub, M. C. Wheeler, S. N. Tulich, K. Kikuchi, K. M. Weickmann, and M. J. Ventrice, 2014: A comparison of OLR- and circulation-based indices for tracking the MJO. *Mon. Wea. Rev.*, 142, 1697–1715.

**Dias, J.**, P. L. Silva Dias, G. N. Kiladis and M. Gehne, 2013. Modulation of shallow water equatorial waves due to a varying equivalent height background. *J. Atmos. Sci.*, 70, 2726–2750.

**Dias, J.**, S. Leroux, S. N. Tulich, and G. N. Kiladis, 2013. How systematic is organized tropical convection within the MJO? *Geophys. Res. Lett.*, 40, 1420– 1425

Silva Dias, M. A. F., J. **Dias**, L. M. V. Carvalho, E. D. Freitas and P. L. Silva Dias, 2012. Changes in extreme daily rainfall for Sao Paulo, Brazil. *Climatic Change*, 1–18.

**Dias, J.**, S. N. Tulich, and G. N. Kiladis, 2012. An object-based approach to assessing tropical convection organization. *J. Atmos. Sci.*, 69, 2488–2504.

Pauluis, O. and J. **Dias**, 2012. Satellite estimates of precipitation-induced dissipation in the atmosphere. *Science*, 335 (6071), 953–956.

**Dias, J.** and O. Pauluis, 2011. Modulations of the phase speed of Convectively Coupled Kelvin Waves by the ITCZ. *J. Atmos. Sci.*, 68 (7), 1446–1459.

**Dias, J.** and O. Pauluis, 2010. Impacts of convective life-time on moist geostrophic adjustment. *J. Atmos. Sci.*, 67 (9), 2960–2971.

**Dias J.** and O. Pauluis O., 2009. Convectively Coupled Waves Propagating along an Equatorial ITCZ. *J. Atmos. Sci.*, 66 (8), 2237–2255.