Anantha Aiyyer

Campus Box 8208
North Carolina State University
Raleigh USA 27695-8208

Phone: 919.515.7973
E-mail: aaiyyer@ncsu.edu
https://aiyyer.github.io/

Education

2003	PhD	Atmospheric Science	State University of New York, Albany *Committee: John Molinari, Lance Bosart, Lloyd Shapiro, Daniel Keyser, Arthur Loesch*
1998	MS	Atmospheric Science	State University of New York, Albany *Committee: John Molinari, Daniel Keyser*
1994	MSc	Physics	Indian Institute of Technology, Kharagpur
1992	BSc	Physics	Indian Institute of Technology, Kharagpur

Employment

2012 – present	Associate Professor with Tenure Department of Marine, Earth and Atmospheric Sciences, North Carolina State University
2006 – 2012	Assistant Professor Department of Marine, Earth and Atmospheric Sciences, North Carolina State University
2003 – 2006	Research Associate *PI: Chris Thorncroft* State University of New York, Albany

Notable Recognition

2011	LeRoy and Elva Martin Award For Teaching Effectiveness: NCSU
2009	National Science Foundation Faculty Early Career (CAREER) Proposal
2004	Narayan R. Ghokale Award for Outstanding Research: SUNY Albany
1998	Max A. Eaton Prize: American Meteorological Society.

Selected Professional and Academic Service

2018 – 2020	Leader, Early Career Geoscience Faculty Workshop
2016	Co-Chair Committee of Visitors, National Science Foundation
2003 – present	Peer reviewer: J. Atmos. Sc., Mon. Wea. Rev., J. Clim., Q. J. Roy. Met. Soc., Clim. Dyn., Geo. Res. Letts.
2006 – present	Proposal reviewer: NSF, NOAA
2014	NSF GRFP review panel member
2008	Max Eaton Award judges panel, 28th Conference on Hurricanes and Tropical Meteorology. Orlando, FL
2006	CMAQ Peer Review, Environmental Protection Agency, Research Triangle Park, North Carolina

Federally funded projects (PI and co-PI)

NASA	Investigation of the Interaction Between Kelvin Waves and Easterly Waves Using CYGNSS Data [**$334,484**]
NASA	Multiscale interactions between the MJO, equatorial waves, and the diurnal cycle over the Maritime Continent [**$383,431**]
NSF	Origin, Storm track Dynamics and Convective Feedback of African Easterly Waves [**$481,728**]
NSF	US-India International Workshop: Collaborative Science, Research, and Education in Air Quality Measurements, Modeling and Analysis [**$39,996**]
NSF	CAREER: Dynamics of African Easterly Waves: Integrating phenomenological studies and Mathematical Instruction in Atmospheric Science [**$556,607**]
NOAA	Improving Prediction of Severe Winds, Convection and Heavy Precipitation in the Southeastern United States [**$375,000**]
US DOE	High-Resolution Modeling to Assess Tropical Cyclone Activity in Future Climate Regimes [**$649,649**]

Technical Skills

Models	Weather and Climate modeling of various complexities and process based diagnostics
Data analysis	Extensive experience with modeled and observed data including reanalysis/reforecast products, CMIP outputs, remote sensing data
Programming	Extensive experience with coding in modern FORTRAN, NCL Experience with Python, version control, MATLAB
OS	Extensive experience with Linux

Publications

29. Russell, J.O. and A. Aiyyer, 2020: The Potential Vorticity Structure and Dynamics of African Easterly Waves. J. Atmos. Sci., 0, https://doi.org/10.1175/JAS-D-19-0019.1.
28. Russell, J. O. H., Aiyyer, A., and White, J. D. 2020. African easterly wave dynamics in convection-permitting simulations: Rotational stratiform instability as a conceptual model. *Journal of Advances in Modeling Earth Systems*, 12, e2019MS001706.
27. Hannah W. and A. Aiyyer 2017: Reduced African Easterly Wave Activity with Quadrupled CO2 in the Super-Parameterized CESM, *J. Clim.*,30, 8253-8274
26. Russell, J. O., A. Aiyyer, J. D. White and W. Hannah 2016:Revisiting the connection between African Easterly Waves and Atlantic tropical cyclogenesis. *Geophys.Res. Lett.*, 44, 587-595.
25. A. Aiyyer, 2015: Recurving Western North Pacific Tropical Cyclones and Mid-Latitude Predictability. *Geophys. Res. Lett.*, 7799-7807.
24. Diaz, M. and A. Aiyyer, 2015: Absolute and Convective Instability of the African Easterly Jet. *J. Atmos. Sc.*, 72., 1805-1826
23. Tyner, B., A. Aiyyer, J. Blaes, and D. R. Hawkins 2015: A Climatological Examination of Sustained Wind Speeds, Wind Gusts and Wind Forecasts for Recent Tropical Cyclones in the Mid-Atlantic Region of the United States. *Wea. Forecasting*, 30, 153-176

22. Diaz, M. and A. Aiyyer, 2013: Genesis of African Easterly Waves by Upstream Energy Dispersion. *J. Atmos. Sc.*, 70, 3492–3512.
21. Mallard, M., G. M. Lackmann and A. Aiyyer, 2013: Atlantic Hurricanes and Climate Change. Part II: Role of Thermodynamic Changes in Decreased Hurricane Frequency. *J. Clim.* 26, 8513–8528
20. Mallard, M., G. M. Lackmann, A. Aiyyer, K. Hill, 2013: Atlantic Hurricanes and Climate Change. Part I: Experimental Design and Isolation of Thermodynamic Effects. *J. Clim.*, 26, 4876-4893.
19. Tyner, B. P. and A. Aiyyer, 2012: Evolution of African Easterly Waves in Isentropic Potential Vorticity Fields. *Mon. Wea. Rev.*, 140, 3634-3652.
18. Aiyyer, A., A. Mekonnen and C. Shreck-III, 2012: Projection of Tropical Cyclones on Wavenumber Frequency Filtered Equatorial Waves. *J. Clim.*, 25, 3653-3658.
17. Schreck, C., J. Molinari and A. Aiyyer, 2012: A Global View of Equatorial Waves and Tropical Cyclogenesis. *Mon. Wea. Rev.*, 140, 774-788.
16. Aiyyer A. and C. Thorncroft, 2011: Interannual to multidecadal variability of vertical shear in the tropics. *J. Clim.*, 24, 2949-2962.
15. Novak. D. R., B. A. Colle and A. R. Aiyyer, 2010: Evolution of Mesoscale Precipitation Band Environments within the Comma Head of Northeast U.S. Cyclones. Mon. Wea. Rev., 138, 2354-2374.
14. N. Meskhidze, L. A. Remer, S. Platnick, R. Negron Juarez, A. M. Lichtenberger, and A. R. Aiyyer (2009), Exploring the differences in cloud properties observed by the Terra and Aqua MODIS sensors, *Atmos. Chem. Phys. Discuss.*, 9, 1489-1520.
13. Galarneau, T. J., Jr., L. F. Bosart, and A. R. Aiyyer, 2008: Closed anticyclones of the subtropics and middle latitudes: A 54-yr climatology (1950-2003) and three case studies. Synoptic-Dynamic Meteorology and Weather Analysis and Forecasting: A Tribute to Fred Sanders, Meteor. Monogr., No. 55, Amer. Meteor. Soc., 349-392.
12. Aiyyer, A. R., and J. Molinari, 2008: MJO and Tropical Cyclogenesis in the Gulf of Mexico and Eastern Pacific: Case Study and Idealized Numerical Modeling. *J. Atmos. Sci.*, 65, 2837-2855.
11. Archambault, H. M., L. F. Bosart, D. Keyser, and A. R. Aiyyer, 2008: Influence of Large-Scale Flow Regimes on Cool-Season Precipitation in the Northeastern United States. *Mon. Wea. Rev.*, 136, 2945-2963.
10. Mekonnen, A., C. D. Thorncroft, A. R. Aiyyer, and G. N. Kiladis, 2008: Convectively coupled Kelvin waves over tropical Africa during the boreal summer: Structure and variability. *J. Clim.*, 21, 6649-6667.
9. Holder, C. T., S. Yuter, A. H. Sobel, and A. R. Aiyyer, 2008:The Mesoscale Characteristics of Tropicalholder Oceanic Precipitation during Kelvin and Mixed Rossby-Gravity Wave Events. *Mon. Wea. Rev.*, 136, 3446-3464.
8. Atallah, E., L. F. Bosart, and A. R. Aiyyer, 2007: Precipitation Distribution Associated with Landfalling Tropical Cyclones over the Eastern United States. *Mon. Wea. Rev.*, 135, 2185-2206.
7. Hopsch, S. B., C. D. Thorncroft, K. Hodges, and A. Aiyyer, 2007: West African Storm Tracks and Their Relationship to Atlantic Tropical Cyclones. *J. Clim.*, 20, 2468-2483.
6. Aiyyer, A., and C. D. Thorncroft, 2006: Climatology of Vertical Wind Shear over the Tropical Atlantic. *J. Clim.*, 19, 2969-2983.
5. Corbosiero, K. L., J. Molinari, A. R. Aiyyer, and M. L. Black, 2006: The Structure and Evolution of Hurricane Elena (1985). Part II: Convective Asymmetries and Evidence for Vortex Rossby Waves. *Mon. Wea. Rev.*, 134, 3073-3091.
4. Mekonnen, A., C. D. Thorncroft, and A. R. Aiyyer, 2006: Analysis of convection and its association with African easterly waves. *J. Clim.*, 19, 5405-5421.
3. Lapenis, A., A. Shivdenko, D. Shepaschenko, S. Nilsson, and A. Aiyyer, 2005: Acclimation of Russian forests to recent changes in climate. *Global Change Biology*, 11, 2090-2102.
2. Nagarajan, B., and A. Aiyyer, 2004: Performance of the ECMWF operational analyses over the tropical Indian ocean. *Mon. Wea. Rev.*, 132, 2275-2282.
1. Aiyyer, A. R., and J. Molinari, 2003: Evolution of Mixed Rossby Gravity Waves in Idealized MJO Environments. , *J. Atmos. Sci.*, 60, 2837-2855.