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Current & Past Employments	NOAA AOML (Oceanographer): Mar 2016 – Present CIMAS University of Miami (Scientist): June 2011 – Mar 2016 CIMAS University of Miami (Associate Scientist): September 2007 – May 2011 CIMAS University of Miami (Assistant Scientist): January 2005 – August 2007 CIMAS University of Miami (Post-Doctoral Associate): January 2002 – December 2005
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Research Highlights	<p>Abrupt increase in Indian Ocean heat content during the warming hiatus: Global mean surface warming has stalled since the end of the 20th century, but the net radiation imbalance at the top of the atmosphere continues to suggest an increasingly warming planet. This apparent contradiction has been reconciled by an anomalous heat flux into the Pacific Ocean, induced by a shift toward a La Nina-like state over the past decade or so. This study found that the enhanced heat uptake by the Pacific Ocean has been compensated by an increased heat transport from the Pacific Ocean to the Indian Ocean, carried by the Indonesian throughflow. As a result, Indian Ocean heat content has increased abruptly during the warming hiatus (Lee et al., 2015) [highlighted in EOS and Nature].</p> <p>Spring persistence, transition and resurgence of El Nino: An objective method is presented to explore the differences in the space-time evolution of equatorial Pacific SST anomalies observed during El Nino events. This inter-El Nino variability is captured by two leading orthogonal modes, which explain more than 60% of the inter-event variance. The first mode illustrates the extent to which warm SST anomalies in the eastern tropical Pacific persist into the boreal spring after the peak of El Nino. The second mode captures the transition and resurgence of El Nino in the following year (Lee et al., 2014b).</p> <p>What drives the southern subtropical anticyclones in austral winter?: The southern subtropical anticyclones are notably stronger in austral winter than in summer, which is in contrast with the Northern Hemisphere in which subtropical anticyclones are more intense in boreal summer consistent with the monsoon heating paradigm. Specially designed model experiments show that during boreal summer enhanced tropical convection activity in the Northern Hemisphere plays important roles in strengthening the southern subtropical anticyclones (Lee et al., 2013b).</p> <p>An optimal ENSO phase for U.S. tornado outbreaks: Among the top ten extreme U.S. tornado outbreak years during 1950-2010, seven years including the top three are identified with a strongly positive Trans-Niño phase. Modeling experiments suggest that a positive Trans-Niño phase provides large-scale atmospheric conditions conducive to intense tornado outbreaks over the U. (Lee et al., 2013a) [highlighted in Bulletin of the American Meteorological Society as Paper in Note].</p> <p>What caused the significant increase in Atlantic ocean heat content since the mid-20th century?: As the upper layer of the world ocean warms gradually during the 20th century, the inter-ocean heat transport from the Indian to Atlantic basin should be enhanced, and the Atlantic</p>
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	<p>Ocean should therefore gain extra heat due to the increased upper ocean temperature of the inflow via the Agulhas leakage. Consistent with this hypothesis, instrumental records indicate that the Atlantic Ocean has warmed substantially more than any other ocean basin since the mid-20th century. A surface-forced global ocean-sea ice coupled model is used to confirm this hypothesis (Lee et al., 2011b) [highlighted in Nature as Community Choice].</p> <p>Delayed advective oscillation of the AMOC: A simple dynamic model is proposed to illustrate the multidecadal oscillation of the AMOC. The proposed oscillation relies on alternating actions of positive and negative feedbacks, which are operated by a slow adjustment of the ocean circulation and the associated time delay in the advective flux response to meridional density gradient perturbation (Lee et al., 2010a).</p>
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Supervisions & Mentoring	<p>Post doc supervisions: Dr. Yanyun Liu (supervisor for 2011 – present) Dr. Zhenya Song (supervisor for 2012 – 2013) Dr. Jili Dong (co-supervisor for 2014 – present) Dr. Hailong Liu (co-supervisor for 2009 – 2015) Dr. Fabian Gomez-Romero (co-supervisor for 2016 – present)</p> <p>Ph.D. dissertation and M.Sc. thesis committee: Dr. Pedro DiNezio (M.Sc. in 2008 & Ph.D. in 2011) Ms. Sarah Larson (Ph.D. present)</p> <p>Mentoring: Ms. Sarah Larson (NOAA Hollings scholar internship in 2010) Ms. Alexandra Ramos (NOAA Education Partnership Program internship in 2012)</p>
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Education:	<p>Old Dominion University Norfolk, VA United States Doctor of Philosophy (Ph.D.): December 1995 Master of Science (M.Sc.): December 1993 Major: Oceanography</p> <p>Inha University, Incheon, South Korea Bachelor of Science (B.Sc.): February 1991 Major: Oceanography</p>
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Professional Publications (Peer-Reviewed Only):	<p>Total number of peer-reviewed publications: 62 Total number of citations: 1093 in Web of Science (1731 in google scholar) H-Index: 19 in Web of Science (24 in google scholar) Research ID: A-5703-2011 ORCID: orcid.org/0000-0002-4047-3545</p> <p>List of peer-reviewed publications</p> <ol style="list-style-type: none"> 1. Lee, S.-K., A. T. Wittenberg, D. B. Enfield, S. J. Weaver, C. Wang and R. M. Atlas, 2015: Springtime U.S. regional tornado outbreaks and their links to ENSO flavors and North Atlantic SST variability, <i>Environ, Res. Lett.</i>, 11, 044008, doi:10.1088/1748-9326/11/4/044008. 2. Lopez, H., S. Dong, S.-K. Lee, and G. Goni, 2016: Decadal modulations of interhemispheric global atmospheric circulations and monsoons by the South Atlantic Meridional Overturning Circulation. <i>J. Climate</i>, 29, 1831-1851, doi:10.1175/JCLI-D-
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15-0491.1.

3. Cheon, W. G., **S.-K. Lee**, A. L. Gordon, Y. Liu, C.-B. Cho and J. Park, 2015: Replicating the 1970s' Weddell Polynya using a coupled ocean - sea ice model with reanalysis surface flux fields. *Geophys. Res. Lett.*, 42, 5411-5418, doi:10.1002/2015GL064364.
4. Domingues, R., G. Goni, F. Bringas, **S.-K. Lee**, H.-S. Kim, G. Halliwell, J. Dong, J. Morell and L. Pomales, 2015: Upper-ocean response to Hurricane Gonzalo (2014): salinity effects revealed by sustained and targeted observations from underwater gliders. *Geophys. Res. Lett.*, 42, 7131–7138, doi:10.1002/2015GL065378.
5. Jo, H.-S., S.-W. Yeh and **S.-K. Lee**, 2015: Changes in the relationship in the SST variability between the tropical Pacific and the North Pacific across the 1998/99 regime shift. *Geophys. Res. Lett.*, 42, 7171–7178, doi:10.1002/2015GL065049.
6. **Lee, S.-K.**, W. Park, M. O. Baringer, A. L. Gordon, B. Huber and Y. Liu, 2015: Pacific origin of the abrupt increase in Indian Ocean heat content during the warming hiatus. *Nature Geosci.*, 8, 445-449, doi:10.1038/ngeo2438. [highlighted in EOS and Nature].
7. Liu, H., C. Wang, **S.-K. Lee**, and D. Enfield, 2015: Inhomogeneous influence of the Atlantic warm pool on United States precipitation. *Atmosph. Sci. Lett.*, 16, 63–69, doi: 10.1002/asl2.521.
8. Liu, Y., **S.-K. Lee**, D. B. Enfield, B. A. Muhling, J. T. Lamkin, F. Muller-Karger and M. A. Roffer, 2015: Potential impact of climate change on the Intra-Americas Seas: Part-1. A dynamic downscaling of the CMIP5 model projections. *J. Marine Syst.*, 148, 56-69, doi:10.1016/j.jmarsys.2015.01.007.
9. Muhling B. A., Y. Liu, **S.-K. Lee**, J. T. Lamkin, M. A. Roffer, F. Muller-Karger and J. F. Walter, 2015: Potential impact of climate change on the Intra-Americas Seas: Part-2. Implications for Atlantic bluefin tuna and skipjack tuna adult and larval habitats. *J. Marine Syst.*, 148, 1-13, doi:10.1016/j.jmarsys.2015.01.010.
10. Song, Z. **S.-K. Lee**, C. Wang, B. Kirtman and F. Qiao, 2015: Contributions of the atmosphere-land and ocean-sea ice model components to the tropical Atlantic SST bias in CESM1. *Ocean Modelling*, 96, 280-290, doi:10.1016/j.ocemod.2015.09.008.
11. van Hoodonk, R., J. A. Maynard, Y. Liu and **S.-K. Lee**, 2015: Downscaled projections of Caribbean coral bleaching that can inform conservation planning. *Glob. Change Biol.*, 21, 3389-3401, doi: 10.1111/gcb.12901.
12. Cheon, W. G., Y.-G. Park, J. R. Toggweiler and **S.-K. Lee**, 2014: The relationship of Weddell polynya and open-ocean deep convection to the Southern Hemisphere westerlies. *J. Phys. Oceanogr.*, 44, 694-713, doi: http://dx.doi.org/10.1175/JPO-D-13-0112.1.
13. Ji, X., J. D. Neelin, **S.-K. Lee** and C. R. Mechoso, 2014: Interhemispheric teleconnections from tropical heat sources in intermediate and simple models. *J. Climate*, 27, 684-697, doi: http://dx.doi.org/10.1175/JCLI-D-13-00017.1.
14. **Lee, S.-K.**, P. N. DiNezio, E.-S. Chung, S.-W. Yeh, A. T. Wittenberg and C. Wang, 2014b: Spring persistence, transition and resurgence of El Nino. *Geophys. Res. Lett.*, 41, 8578-8585, doi:10.1002/2014GL062484.
15. **Lee, S.-K.**, B. E. Mapes, C. Wang, D. B. Enfield and S. J. Weaver, 2014a: Springtime ENSO phase evolution and its relation to rainfall in the continental U.S. *Geophys. Res. Lett.*, 41, 1673-1680, doi:10.1002/2013GL059137.
16. Wang, C., L. Zhang, **S.-K. Lee**, L. Wu and C. R. Mechoso, 2014: A global perspective on CMIP5 climate model biases. *Nature Clim. Change*, 4, 201-205, doi:10.1038/nclimate2118.
17. Zhang, L., C. Wang and **S.-K. Lee**, 2014: Potential role of Atlantic warm pool-induced freshwater forcing in the Atlantic meridional overturning circulation: Ocean-sea ice coupled model simulations. *Climate Dynam.*, 43, 553-574, doi:10.1007/s00382-013-2034-z.

18. Zhang, L. C. Wang, Z. Song, **S.-K. Lee**, 2014: Remote effect of the model cold bias in the tropical North Atlantic on the warm bias in the tropical southeastern Pacific. *J. Adv. Model. Earth Syst.*, 6, 1016-1026, doi:10.1002/2014MS000338.
19. **Lee, S.-K.**, C. R. Mechoso, C. Wang and J. D. Neelin, 2013b: Interhemispheric influence of the northern summer monsoons on the southern subtropical anticyclones. *J. Climate*, 26, 10193-10204, doi:http://dx.doi.org/10.1175/JCLI-D-13-00106.1.
20. **Lee, S.-K.**, R. Atlas, D. B. Enfield, C. Wang and H. Liu, 2013a: Is there an optimal ENSO pattern that enhances large-scale atmospheric processes conducive to major tornado outbreaks in the U.S.? *J. Climate*, 26, 1626-1642, doi:http://dx.doi.org/10.1175/JCLI-D-12-00128.1. [highlighted in Feb, 2013 issue of Bulletin of the American Meteorological Society as Paper in Note]
21. Liu, H., C. Wang, **S.-K. Lee** and D. B. Enfield, 2013: Atlantic warm pool variability in the CMIP5 simulations. *J. Climate*, 26, 5315-5336, doi: http://dx.doi.org/10.1175/JCLI-D-12-00556.1.
22. Menary, M. B, C. D. Roberts, M. D. Palmer, P. R. Halloran, L. Jackson, R. A. Wood, W. A. Mueller, D. Matei and **S.-K. Lee**, 2013: Mechanisms of aerosol-forced AMOC variability in a state of the art climate model. *J. Geophys. Res.*, 118, 2087-2096, doi:10.1002/jgrc.20178.
23. Wang, C., L. Zhang, **S.-K. Lee**, 2013: Response of freshwater and sea surface salinity to variability of the Atlantic warm pool. *J. Climate*, 26, 1249-1267, doi:10.1175/JCLI-D-12-00284.1.
24. DiNezio, P. N., B. P. Kirtman, A. C. Clement, **S.-K. Lee**, G. A. Vecchi and A. Wittenberg, 2012: Mean climate controls on the simulated response of ENSO to increasing greenhouse gases. *J. Climate*, 25, 7399-7420, doi: http://dx.doi.org/10.1175/JCLI-D-11-00494.1.
25. Larson, S., **S.-K. Lee**, C. Wang, E.-S. Chung and D. Enfield, 2012: Impacts of non-canonical El Nino patterns on Atlantic hurricane activity. *Geophys. Res. Lett.*, 39, L14706, doi:10.1029/2012GL052595.
26. Liu, H., C. Wang, **S.-K. Lee** and D. B. Enfield, 2012: Atlantic warm pool variability in the IPCC twentieth-century climate simulations. *J. Climate*, 25, 5612-5628, doi:10.1175/JCLI-D-11-00376.1.
27. Liu, Y., **S.-K. Lee**, B. A. Muhling, J. T. Lamkin and D.B. Enfield, 2012: Significant reduction of the Loop Current in the 21st century and its impact on the Gulf of Mexico. *J. Geophys. Res.*, 117, C05039, doi:10.1029/2011JC007555.
28. Wang, C., S. Dong, A. T. Evan, G. R. Foltz and **S.-K. Lee**, 2012: Multidecadal covariability of North Atlantic sea surface temperature, African dust, Sahel rainfall and Atlantic hurricanes. *J. Climate*, 25, 5404-5415, doi:10.1175/JCLI-D-11-00413.1.
29. **Lee, S.-K.**, W. Park, E. van Sebille, M. O. Baringer, C. Wang, D. B. Enfield, S. Yeager and B. P. Kirtman, 2011b: What caused the significant increase in Atlantic Ocean heat content since the mid-20th century? *Geophys. Res. Lett.*, 38, L17607, doi:10.1029/2011GL048856. [highlighted in Oct. 6, 2011 issue of Nature as Community Choice].
30. **Lee, S.-K.**, D. B. Enfield and C. Wang, 2011a: Future impact of differential inter-basin ocean warming on Atlantic hurricanes. *J. Climate*, 24, 1264-1275.
31. Muhling, B. A., **S.-K. Lee**, J. T. Lamkin and Y. Liu, 2011: Predicting the effects of climate change on bluefin tuna (*Thunnus thynnus*) Spawning habitat in the Gulf of Mexico. *ICES J. Mar. Sci.*, doi:10.1093/icesjms/fsr008.
32. Wang, C., H. Liu, **S.-K. Lee** and R. Atlas, 2011: Impact of the Atlantic warm pool on United States landfalling hurricanes. *Geophys. Res. Lett.*, doi:10.1029/2011GL049265. [highlighted in Oct. 21, 2011 issue of Science as Editor's Choice].
33. **Lee, S.-K.**, C. Wang and D. B. Enfield, 2010b: On the impact of central Pacific warming events on Atlantic tropical storm activity. *Geophys. Res. Lett.*, 37, L17702,

doi:10.1029/2010GL044459.

34. **Lee, S.-K.** and C. Wang, 2010a: Delayed advective oscillation of the Atlantic thermohaline circulation. *J. Climate*, 23, 1254-1261.
35. Wang, C. and **S.-K. Lee**, 2010: Is hurricane activity in one basin tied to another? *EOS*, 91, 93-94, doi:10.1029/2009ES002729.
36. Wang, C., **S.-K. Lee** and C. R. Mechoso, 2010: Inter-hemispheric influence of the Atlantic warm pool on the southeastern Pacific. *J. Climate*, 23, 404-418.
37. Wang, C., H. Liu and **S.-K. Lee**, 2010: The record-breaking cold temperatures during the winter of 2009/10 in the Northern Hemisphere. *Atmos. Sci. Lett.*, doi:10.1002/asl.278.
38. DiNezio, P. N., A. C. Clement, G. A. Vecchi, B. J. Soden, B. P. Kirtman and **S.-K. Lee**, 2009: Climate response of the equatorial Pacific to global warming. *J. Climate*, 22, 4873-4892.
39. **Lee, S.-K.**, C. Wang and B. E. Mapes, 2009: A simple atmospheric model of the local and teleconnection responses to tropical heating anomalies. *J. Climate*, 22, 272-284.
40. Wang, C. and **S.-K. Lee**, 2009: Co-variability of tropical cyclones in the North Atlantic and the eastern North Pacific. *Geophys. Res. Lett.*, 36, L24702, doi:10.1029/2009GL041469.
41. Wang, C. and **S.-K. Lee**, 2009: Reply to comment by Joseph J. Barsugli on "Global warming and United States landfalling hurricanes". *Geophys. Res. Lett.*, 36, L01706, doi:10.1029/2008GL035111.
42. **Lee, S.-K.**, D. B. Enfield and C. Wang, 2008: Why do some El Ninos have no impact on tropical North Atlantic SST? *Geophys. Res. Lett.*, 35, L16705, doi:10.1029/2008GL034734.
43. **Lee, S.-K.** and C. Wang, 2008: Tropical Atlantic decadal oscillation and its impact on the equatorial atmosphere-ocean dynamics: A simple model study. *J. Phys. Oceanogr.*, 38, 193-212.
44. Wang, C. and **S.-K. Lee**, 2008: Global warming and United States landfalling hurricanes. *Geophys. Res. Lett.*, 35, L02708, doi:10.1029/2007GL032396.
45. Wang, C., **S.-K. Lee** and D. B. Enfield, 2008: Atlantic warm pool acting as a link between Atlantic multidecadal oscillation and Atlantic tropical cyclone activity. *Geochem. Geophys. Geosyst.*, 9, Q05V03, doi:10.1029/2007GC001809.
46. Wang, C., **S.-K. Lee** and D. B. Enfield, 2008: Climate response to anomalously large and small Atlantic warm pools during the summer. *J. Climate*, 21, 2437-2450.
47. **Lee, S.-K.**, D. B. Enfield and C. Wang, 2007: What drives seasonal onset and decay of the Western Hemisphere warm pool? *J. Climate*, 20, 2133-2146.
48. Wang, C. and **S.-K. Lee**, 2007: Atlantic warm pool, Caribbean low-level jet, and their potential impact on Atlantic hurricanes. *Geophys. Res. Lett.*, 34, L02703, doi:10.1029/2006GL028579.
49. Wang, C., **S.-K. Lee** and D. B. Enfield, 2007: Impact of the Atlantic warm pool on the summer climate of the Western Hemisphere. *J. Climate*, 20, 5021-5040.
50. Enfield, D. B., **S.-K. Lee** and C. Wang, 2006: How are large Western Hemisphere warm pools formed? *Prog. Oceanogr.*, 70, 346-365.
51. Pelegri, J. L., J. H. Churchill, A. D. Kirwan, Jr., **S.-K. Lee**, R. E. Munn and N. R. Pettigrew, 2006: Gabriel T. Csanady: Understanding the physics of the ocean. *Prog. Oceanogr.*, 70, 91-112.
52. Wang, C., D. B. Enfield, **S.-K. Lee** and C. W. Landsea, 2006: Influences of Atlantic Warm Pool on Western Hemisphere Summer Rainfall and Atlantic Hurricanes. *J. Climate*, 19, No. 12, 3011-3028.
53. Enfield, D. B. and **S.-K. Lee**, 2005: The heat balance of the Western Hemisphere warm pool. *J. Climate*, 18, 2662-2681.
54. **Lee, S.-K.**, D. B. Enfield and C. Wang, 2005: Ocean General Circulation Model

	<p>sensitivity experiments on the annual cycle of Western Hemisphere Warm Pool. <i>J. Geophys. Res.</i>, 110, C09004, doi:10.1029/2004JC002640.</p> <p>55. Thacker, C. W., S.-K. Lee and G. R. Halliwell Jr., 2004: Assimilating 20 years of Atlantic XBT data into HYCOM: A first look. <i>Ocean Model.</i>, 7, 183-210.</p> <p>56. Lee, S.-K., J. L. Pelegri and J. Kroll, 2001. Slope control in western boundary currents. <i>J. Phys. Oceanogr.</i>, 31, 3349-3360.</p> <p>57. Lee, S.-K., 2001: On the structure of supercritical western boundary currents. <i>Dynam. Atmos. Oceans</i>, 33, 303-319.</p> <p>58. Lee, S.-K. and G. T. Csanady, 1999: Warm water formation and escape in the upper tropical Atlantic Ocean: Part I. a literature review. <i>J. Geophys. Res.</i>, 104, c12, 29561-29571.</p> <p>59. Lee, S.-K. and G. T. Csanady, 1999: Warm water formation and escape in the upper tropical Atlantic Ocean: Part II. a numerical model study. <i>J. Geophys. Res.</i>, 104, c12, 29573-29590.</p> <p>60. Lee, S.-K., 1999: Self-excited variability of the East Korean Warm Current: A quasi-geostrophic model study. <i>J. Korean Soc. Oceanogr.</i>, 34, 1-21.</p> <p>61. Lee, S.-K. and G. T. Csanady, 1994: Instability waves in the Gulf Stream front and its thermocline layer. <i>J. Mar. Res.</i>, 52, 837-863.</p>
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<p>Presentations (national & international meetings):</p>	<p>Oral presentations:</p> <ol style="list-style-type: none"> 1. Inter-ocean exchanges and regional sinks of heat during the warming hiatus (Invited), Annual AGU Meeting, December 14 – 18, 2015, San Francisco, CA. 2. Springtime ENSO flavors and their impacts on US regional tornado outbreaks, Annual AGU Meeting, December 14 – 18, 2015, San Francisco, CA. 3. ENSO phase evolution and its relationship to tornado outbreaks (Invited), NOAA Climate and Severe Weather Workshop, March 11-12, 2015, College Park, MD. 4. Interhemispheric influence of the northern summer monsoons on the southern subtropical anticyclones, 26th Conference on Climate Variability and Change, 2014 Annual AMS Meeting, February 2 - 6, 2014, Atlanta, GA. 5. ENSO phase transition in spring and its potential impact on tornado outbreaks in the US, 26th Conference on Climate Variability and Change, 2014 Annual AMS Meeting, February 2 - 6, 2014, Atlanta, GA. 6. Trans-Niño and springtime tornado outbreaks in the US, US CLIVAR ENSO Diversity Workshop, February 6 - 8, 2013, Boulder, CO 7. Atlantic Warm Pool SST Bias in HYCOM, OFCM - 65th Interdepartmental Hurricane Conference, February 28 - March 3, 2011, Miami, FL. 8. Is there an optimal ENSO pattern that enhances large-scale atmospheric processes conducive to major tornado outbreaks over the US?, NOAA Workshop - Monitoring Changes in Extreme Storm Statistics: State of Knowledge, July 25-27, 2011, Asheville, NC. 9. What caused the significant increase in Atlantic Ocean heat content since the mid-20th century?, US CLIVAR Workshop on Coupled Ocean-Atmosphere-Land Processes in the Tropical Atlantic, March 23-25, 2011, Miami, FL. 10. Why does the Atlantic Thermohaline Circulation oscillate on multidecadal timescales?, US CLIVAR 2010 Atlantic Meridional Overturning Circulation (AMOC) Annual Meeting, June 7 - 9, 2010, Miami, FL. 11. Simulation of Atlantic warm pool in the Hybrid-Coordinate Ocean Model, OFCM - 64th Interdepartmental Hurricane Conference, March 1-4, 2010, Savannah, GA. 12. What Drives Anomalous Warming of Atlantic Warm Pool (AWP) in Boreal Summer?, AGU - The Meeting of the Americas 2008 Joint Assembly, May 27-30, 2008, Fort-Lauderdale, FL. 13. OGCM sensitivity experiments on the annual cycle of Western Hemisphere warm pool,
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Layered Ocean Model Users' Workshop, January 26 - 28, 2005, Miami, FL.

Poster presentations:

14. Observations for Climate: The need for an ocean observing system in the Caribbean and Gulf of Mexico for improving seasonal outlook and intensity forecast of hurricanes, WCRP Open Science Conference, October 24 - 28, 2011, Denver, CO.
15. Why does the Atlantic Thermohaline Circulation oscillate on multidecadal timescales?, AGU Ocean Sciences meeting, February 22-26, 2010, Portland, OR.
16. Future impact of differential inter-basin ocean warming on Atlantic hurricanes, WCRP Workshop - Predicting the Climate of Coming Decades, January 11-14, 2010, Miami, FL.
17. Why do some El Niño have no impact on tropical North Atlantic SST, AGU Ocean Sciences meeting, March 2-7, 2008, Orlando, FL.
18. OGCM study of the Western Hemisphere Warm Pool, US CLIVAR Atlantic Science Conference, January 31 - February 2, 2005, Miami, FL.
19. OGCM study of the interannual variability of Western Hemisphere warm pool, NOAA's 29th Annual Climate Diagnostics and Prediction Workshop, October 18-22, 2004, Madison, WI.

Current and Past Research Projects

Currently funded research projects:

1. NOAA/CPO MAPP Program: Toward developing a seasonal outlook for the occurrence of major U. S. tornado outbreaks, PIs: **S.-K. Lee**, R. Atlas, C. Wang, D. Enfield, and S. Weaver, \$430K, Aug/2012 - Sep/2015.
2. NOAA/CPO MAPP Program: Variability and predictability of the Atlantic warm pool and its impacts on extreme events in North America, PIs: C. Wang, **S.-K. Lee** and D. B. Enfield, \$442K, Aug/2012 - Sep/2015.
3. NASA/BIOCLIM Program: "Management and conservation of Atlantic bluefin tuna (Thunnus Thynnus) and other highly migratory fish in the Gulf of Mexico under IPCC climate change scenarios: A study using regional climate and habitat models", M. A. Roffer, J. T. Lamkin, F. E. Muller-Karger, **S.-K. Lee**, B.A. Muhling and G.J. Goni, \$857K, Sep/2011 - Aug/2015.
4. NOAA/OAR: "CIMAS contributions to OAR disaster recovery act projects", PIs: **S.-K. Lee**, \$1,983K, Feb/2014 - Jan/2016.
5. NOAA/OA Program: "High-resolution ocean-biogeochemistry modeling for the East and Gulf coasts of the U.S. in support of the coastal monitoring and research objectives of the NOAA OA Program", PIs: **S.-K. Lee**, R. Wanninkhof, Y. Liu, L. Barbero, and R. van Hooijdonk, \$267K, Jun/2015 - Sep/2017.
6. NOAA/NGI: "Predicting the impact of anthropogenic climate change on physical and biogeochemical processes in the northern Gulf of Mexico", PIs: F. Hernandez, **S.-K. Lee**, J. Lamkin and Y. Liu, \$132K, Oct/2015 - Sep/2016.
7. NOAA/CPC: "Building a pilot seasonal outlook for the occurrence of major US tornado outbreaks in support of the operations at NOAA's Climate Prediction Center", PIs: **S.-K. Lee** and S. Weaver, \$70K, Oct/2015 - Sep/2016.

Past projects:

8. NSF/GEO/ATM Program: "What causes the tropical Atlantic SST bias in CCSM3?", PIs: **S.-K. Lee**, D. Enfield, B. Kirtman and C. Wang, \$366K, Feb/2009 - Jan/2012.
9. NOAA/CPO MAPP Program: "Diagnostic and modeling studies on impacts, mechanisms and predictability of the Atlantic warm pool", PIs: C. Wang, D. Enfield and **S.-K. Lee**, \$318K, Jul/2009 - Jun/2012.
10. NOAA/NHC JHT Program: "Improving predictability of the Atlantic Warm Pool in ocean model for assistance to operational hurricane forecast", PIs: C. Wang, **S.-K. Lee**

	<p>and C. Lozano, \$185K, Aug/2009 - Jul/2011.</p> <ol style="list-style-type: none"> 11. NOAA/FATE Program: “Predicting the effects of climate change on bluefin tuna (Thunnus thynnus) spawning in the Gulf of Mexico using downscaled climate models”, PIs: B. Muhling, S.-K. Lee, M. Schirripa, and W. Ingram, \$93K, Apr/2010 - Mar/2011. 12. NSF/GEO/ATM Program: “Collaborative research: The Southern subtropical anticyclones”, PIs: S.-K. Lee, C. Mechoso and C. Wang, \$328K, Jan/2011 - Dec/2013. 13. NOAA/CPO CPPA Program: “Climate impacts of the Western Hemisphere warm pool on the Americas”, PIs: C. Wang, S.-K. Lee and D. Enfield, \$300K, Apr/2006 - Mar/2009.
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<p>Additional Information:</p>	<ol style="list-style-type: none"> 1. NOAA/CPO’s Climate Prediction Task Force (CPTF) team member (2012 - present) 2. NOAA Team Member of the Month (October, 2012) 3. Reviewed about 70 ocean and climate related papers for peer-reviewed journals including Nature Geoscience, Nature Climate Change, Journal of Climate, Journal of Physical Oceanography, Journal of Atmosphere Sciences, Journal of Atmospheric and Oceanic Technology, Theoretical and Applied Climatology, Climate of the Past, Oceanography, Journal of Oceanography, Journal of the Meteorological Society of Japan, Dynamics of Atmospheres and Oceans, Geophysical Research Letters, Climate Dynamics, Monthly Weather Reviews, Scientific Reports, Deep Sea Research and EOS 4. Reviewed 7 NSF proposals and 2 NASA post doc proposals 5. Co-authored a white paper “Advancing the Nation’s capability to anticipate tornado and severe weather risk” (2013) 6. Co-authored a white paper “Climate Scenarios: A Florida-Centric View” (2011) 7. Co-prepared NOAA’s State of Science Fact Sheet: “Tornado, Climate Variability and Climate Change” (2013) 8. Lee et al., (2015) was highlighted by Nature, EOS and NOAA (May 2015) 9. Muhling et al., (2015) was highlighted by NOAA (February 2015) 10. Lee et al., (2013a) was highlighted in February 2013 issue of Bulletin of the American Meteorological Society as Paper to Note. 11. Lee et al., (2011b) was highlighted in October 6, 2011 issue of Nature as Community Choice. 12. Wang et al., (2011) was highlighted in October 21, 2011 issue of Science as Editor’s Choice.
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