

LIAN XIE

Professor, Department of Marine, Earth and Atmospheric Sciences (MEAS), North Carolina State University (NCSU)

RESEARCH INTERESTS:

Atmosphere-Ocean Interactions, Tropical Cyclones, Regional Climate Modeling and Downscaling, Coastal Meteorology and Oceanography

EDUCATION:

7/1992: Ph.D. (Meteorology and Physical Oceanography), University of Miami, Miami, FL.

1/1985: M.S. (Meteorology), Nanjing Institute of Meteorology, Nanjing, China. .

7/1982: B.Sci., (Meteorology), Nanjing Institute of Meteorology, Nanjing, China.

ACADEMIC APPOINTMENTS:

2005 --- *present* Professor, NCSU, Department of MEAS, Raleigh, North Carolina.

2001 --- 2005 Associate Professor with tenure, NCSU/MEAS, Raleigh, North Carolina.

1998 --- 2001 Assistant Professor, NCSU/MEAS, North Carolina.

1992 --- 1998 Visiting Assistant Professor and Coordinator of Cooperative Marine Science Ph.D. Program, NCSU/MEAS, Raleigh, North Carolina.

1987 --- 1992: Research Assistant, University of Miami, RSMAS, Miami, Florida.

1985 --- 1987: Lecturer, Department of Meteorology. Nanjing Institute of Meteorology, Nanjing, China.

PROFESSIONAL SERVICES AND AWARDS:

Professional Services:

1995 – 1996: Member of U.S. Weather Research Program Prospectus Development Team on Coastal Meteorology (PDT3).

1996 – 1997: Member of U.S. Weather Research Program Prospectus Development Team on Landfalling Hurricanes (PDT5).

1998 – 2000: Associate Editor, Weather and Forecasting.

2000 – present: Editorial Board, Advances in Atmospheric Sciences.

2002-2006: Science Advisory Panel: Beijing Urban Environment Research Program, 2002-2006.

2002: Chair, Sino-US Workshop on Dust Storms and Their Effects on Human Health, Raleigh, NC. November 25-26, 2002 (Co-sponsored by NASA, NOAA, EPA, NIEHS, and USDA).

2004: Coordinator, 2004 International Environment Forum, Beijing, September 12-15, 2004.

2005 – 2014: Editorial Board, Journal of Ocean University of China.

2006: Co-Chair, “Storm surge modeling and forecasting training workshop”, NWS, Raleigh, NC, May 1, 2006.

2008: Session Chair, OS16: Coastal and Mesoscale Air-Sea Interactions, 2008 Asia Oceania Geophysical Society Annual Meeting, Bussan, Korea.

2008: Steering Committee, Open Source POM model development team

2009: Session Chair, Modeling the ocean: dynamics, analysis and synthesis. Taipei, February 20-26, 2009

2009: Chair, Science Steering Committee, 2009 Wuhan International Conference on Environment, Wuhan, China, June 27-30, 2009.

2010: Chair, Science Advisory Panel, China National Marine Environment Forecast Center

2013: Chief Guest Editor, Advances in Meteorology, Special Issue on Marine Meteorology and Air-Sea Interactions

2014: Chief Guest Editor, Advances in Meteorology, Special Issue on Regional Climate Downscaling

University Services:

2002 – 2005: College Computer Committee, College of Physical and Mathematical Sciences
2000 – 2005: Chair, Departmental Computing and Network Facility Committee,
2004 – 2007: Chair, Departmental Seminar Committee.
2007 – 2008: Departmental Computing and Network Facility Committee
2007 – Present: Departmental Teaching Peer Review Committee
2012 – 2014: Departmental Committee on Committees
2012 – Present: Departmental Graduate Program Committee
2007 – 2008: Chair, Environmental Cluster Development Committee
2007 – 2008: Co-Chair, Climate Dynamics Search Committee
2008: Member of Physical Oceanography Search Committee
2009: University PIRE Proposal Review Panel
2009 – 2011: Departmental Comprehensive Review/Executive/Advisory Committee
2011: F&A allocation committee
2009 – 2012: University Standing Committee on Extension, Engagement and Economic Development
2012: NCSU IGERT Review Panel
2011 – present: Advisory Board, NCSU Confucius Institute

Honors:

Professional and Honor Society Membership: American Meteorological Society (AMS), American Association for the Advancement of Sciences (AAAS), Sigma-Xi Honor Society.
1998: National Weather Service Certificate of Appreciation Award.
2003: National Weather Service Award for Collaborative Research.
2007: Featured in Triangle Business Journal as “10 area people working to change the world”
2007: Cheung-Kong Distinguished Scholar award by the Ministry of Education of China.
2007: World Meteorological Organization Invited Lecturer for “International Training Workshop on Tropical Cyclone Disaster Reduction”, Guangzhou, China, March 26-31, 2007.
2008: Certificate of Appreciation, Qingdao Meteorological Bureau
2014: Governor’s award for dedication and outstanding services to the state

REFEREED PUBLICATIONS (120)

1. Gao, T., L. Xie, and Bin Liu, 2015: Association of Extreme Precipitation over the Yangtze River Basin with Global Air-Sea Heat Fluxes and Moisture Transport, *International J. of Climate*, DOI: 10.1002/joc.4534.
2. Xie, Lian and Bin Liu, 2015: Marine Meteorology, *Encyclopedia of Atmospheric Sciences*, 2nd edition, Gerald R. North edited, Elsevier Ltd. 287-292. doi:10.1016/B978-0-12-382225-3.00212-7.
3. Fredrick Semazzi, Bin Liu, Lian Xie, Kara Smith, Michael Angus, Masilin Gudoshava, Rowan Argent, Xia Sun, Stefan Liess, Atreyee, Bhattacharya, 2015: Decadal variability of East African monsoon, *CLIVAR Exchanges* No. 66, Vol. 19, No. 1, Jan 2015.
4. Lin, L., Z Liu, L Xie, H Gao, Z Cai, Z Chen, J Zhao, 2015: Dynamics governing the response of tidal current along the mouth of Jiaozhou Bay to land reclamation, *Journal of Geophysical Research: Oceans*, DOI: 10.1002/2014JC010434.
5. Xie, L, F Semazzi, A Hanna, R Anyah, H Gao, Y He, 2015: Regional Climate Change: Downscaling, Prediction, and Impact Assessment, *Advances in Meteorology*, Volume 2015 (2015), Article ID 290281, <http://dx.doi.org/10.1155/2015/290281>.
6. Argent, R., X Sun, F Semazzi, L Xie, B Liu, 2014: The Development of a Customization Framework for the WRF Model over the Lake Victoria Basin, Eastern Africa on Seasonal

- Timescales, *Advances in Meteorology*, Volume 2015 (2015), Article ID 653473, <http://dx.doi.org/10.1155/2015/653473>
7. Sun, X., L Xie, F Semazzi, B Liu, 2014: Effect of lake surface temperature on the spatial distribution and intensity of the precipitation over Lake Victoria Basin, *Monthly Weather Review*, 143, 1179–1192. doi: <http://dx.doi.org/10.1175/MWR-D-14-00049.1>.
 8. Liu, B., KB Costa, L Xie, FHM Semazzi, 2014: Dynamical Downscaling of Climate Change Impacts on Wind Energy Resources in the Contiguous United States by Using a Limited-Area Model with Scale-Selective Data Assimilation, *Advances in Meteorology* 2014, Volume 2014 (2014), Article ID 897246, <http://dx.doi.org/10.1155/2014/897246>.
 9. Sun, X., L Xie, FHM Semazzi, B Liu, 2014: A numerical investigation of the precipitation over Lake Victoria basin using a coupled atmosphere-lake limited-area model, *Advances in Meteorology*, volume 2014 (2014), Article ID 960924, <http://dx.doi.org/10.1155/2014/960924>.
 10. Deng, Y., T Gao, H Gao, X Yao, L Xie, 2014: Regional precipitation variability in East Asia related to climate and environmental factors during 1979-2012, *Scientific reports* 4, Article number: 5693 doi:10.1038/srep05693
 11. Liu, Y., Lian Xie, John M. Morrison, Dan Kamykowski and William Sweet, 2014: Ocean Circulation and Water Mass Characteristics around the Galápagos Archipelago Simulated by a Multi-Scale Nested Ocean Circulation Model. *International Journal of Oceanography*, Vol. 2004, <http://dx.doi.org/10.1155/2014/198686>.
 12. Gao, T. and L. Xie, 2014: Multivariate Regression Analysis and Statistical Modeling for Summer Extreme Precipitation over the Yangtze River Basin, China. *Advances in Atmospheric Sciences*, Volume 2014 (2014), <http://dx.doi.org/10.1155/2014/269059>.
 13. Sheng., Y.P., Justin R Davis, Renato Figueiredo, Bin Liu, Huiqing Liu, Rick Luettich, Vladimir A Paramygin, Robert Weaver, Robert Weisberg, Lian Xie, Lianyuan Zheng, 2014: A Regional Testbed for Storm Surge and Coastal Inundation Models—An Overview. *Estuarine and Coastal Modeling*. Pp476-495. Read More: <http://ascelibrary.org/doi/abs/10.1061/9780784412411.00028>
 14. Xie, L., B. Liu, J. M. Morrison, H. Gao, and J. Wang, 2013: Air-sea interactions and marine meteorology. *Advances in Meteorology*, Vol. 2013, 162475, doi:10.1155/2013/162475.
 15. Li, Y., S. Peng, J. Yan, and L. Xie, 2013: On improving storm surge forecasting using an adjoint optimal technique, *Ocean Modelling*, Vol. 72, 185-197.
 16. Zhao, D., X. Ma, B. Liu, and L. Xie, 2013: Rainfall effect on wind waves and the turbulence beneath air-sea interface. *Acta Oceanologica Sinica*, 32(11), 10-20.
 17. Liu, Y., Lian Xie, John Morrison, Dan Kamykowski, Dynamic Downscaling of the Impact of Climate Change on the Ocean Circulation in the Galápagos Archipelago. *Advances in Meteorology*, Vol. 2013, 837432, doi:10.1155/2013/837432.
 18. Deng, Z. and L. Xie, Impact of atmospheric forcing on ocean circulation: a numerical study. *Advances in Meteorology*, Vol. 2013, 365818, doi:10.1155/2013/365818.
 19. Tang, Q. L. Xie, G. Lackmann, and B. Liu, Modeling the Impacts of the Large-Scale Atmospheric Environment on Inland Flooding during the Landfall of Hurricane Floyd (1999). *Advances in Meteorology*, **Vol. 2013**, 294956, doi:10.1155/2013/294956.
 20. Li, R., L. Xie, B. Liu, and C. Guan, 2013: On the sensitivity of hurricane storm surge simulation to domain size. *Ocean Modelling*, 67, 1-12.
 21. Peng, S., Y. Li, and L. Xie, 2013: Adjusting the Wind Stress Drag Coefficient in Storm Surge Forecasting Using an Adjoint Technique. *J. Atmos. Oceanic Technol.*, 30, 590–608.
 22. Tang, Q., L. Xie, and B. Liu, 2012: Modeling tropical cyclone induced stream flow in Tar Pamlico river of North Carolina. *Tropical Cyclone Res. Rev.*, 1(3), 402-417.

23. Sheng, P., Justin R Davis, Renato Figueiredo, Bin Liu, Huiqing Liu, Rick Luettich, Vladimir A Paramygin, Robert Weaver, Robert Weisberg, Lian Xie, Lianyuan Zheng, 2012: A Regional Testbed for Storm Surge and Coastal Inundation Models—An Overview. Estuarine and Coastal Modeling, ASCE Publications, 2012.
24. Liu, H., B. Liu, L. Xie, and K. Zhang, 2012: Simulation of ocean responses to an idealized landfalling tropical cyclone using a coupled atmosphere-wave-ocean modeling system. *Tropical Cyclone Res. Rev.*, 1(3), 373-389.
25. Liu, B., C. Guan, and L. Xie, 2012: The wave state and sea spray related parameterization of wind stress applicable to from low to extreme winds. *J. Geophys. Res.*, 117, C00J22, doi: 10.1029/2011JC007786. [PDF]
26. Liu, B and L. Xie, 2012: A scale-selective data assimilation approach to improving tropical cyclone track and intensity forecasts in a limited-area model: A case study of Hurricane Felix (2007). *Wea. Forecasting*, **27**, 124-140.
27. Deng, Zengan, Lian Xie, Guijun Han, Xuefeng Zhang and Kejian Wu, 2012: The effect of Coriolis-Stokes forcing on upper ocean circulation in a two-way coupled wave-current model. Chinese Journal of Oceanology and Limnology, Volume 30, Number 2 (2012), 321-335, DOI: 10.1007/s00343-012-1069-z.
28. Liu, B, C. Guan, L. Xie, and D. Zhao, 2012: An investigation of the effects of wave state and sea spray on an idealized typhoon using an air-sea coupled modeling system. *Adv. Atmos. Sci.*, 29, 391-406.
29. Liu, B., H. Liu, L. Xie, C. Guan, and D. Zhao, 2011: A coupled atmosphere-wave-ocean modeling system: Simulation of the intensity of an idealized tropical cyclone. *Mon. Wea. Rev.*, 139, 132-152.
30. Xie, L., H. Liu, B. Liu, and S. Bao, 2011: A numerical study of the effect of hurricane wind asymmetry on storm surge and inundation. *Ocean Modelling*, 36, 71-79.
31. Xia, M., L. Xie, L.J. Pietrafesa, and M. Whitney, 2011: The ideal response of a Gulf of Mexico estuary plume to wind forcing: Its connection with salt flux and a Lagrangian view. *J. OF Geophysical Res.*, 116, C08035, 14 PP., 2011 doi:10.1029/2010JC006689
32. Xie, L., H. Liu, B. Liu, and S. Bao, 2011: A numerical study of the effect of hurricane wind asymmetry on storm surge and inundation. *Ocean Modelling*, 36, 71-79.
33. Liu, B., H. Liu, L. Xie, C. Guan, and D. Zhao, 2011: A coupled atmosphere-wave-ocean modeling system: Simulation of the intensity of an idealized tropical cyclone. *Mon. Wea. Rev.*, 139, 132-152.
34. Eggleston D., Nathalie B. Reynolds, Lisa L. Etherington, G. Plaia, L. Xie, 2010: Tropical storm and environmental forcing on regional blue crab (*Callinectes sapidus*) settlement. *Fisheries Oceanography*, 19, 89-106.
35. Zhao, D. and L. Xie, 2010: A Practical bi-parameter formula of gas transfer velocity depending on wave states. *J. Oceanogr.*, 66, 663-671.
36. Xia, M., L. Xie, and L. J. Pietrafesa, 2010: Winds and the orientation of a coastal plane estuary plume. *Geophys. Res. Lett.*, 37, L19601, doi:10.1029/2010GL044494.
37. Xie, L., B. Liu, and S. Peng, 2010: Application of scale-selective data assimilation to tropical cyclone track simulation. *J. Geophys. Res.*, 115, D17105, doi:10.1029/2009JD013471.
38. Xie, L., B. Liu, H. Liu, and C. Guan, 2010: Numerical simulation of tropical cyclone intensity using an air-sea-wave coupled prediction system. *Advances in Geosciences*, 18(OS), 19-43.
39. Peng, S., L. Xie, B. Liu, and F. Semazzi, 2010: Application of scale-selective data assimilation to regional climate modeling and prediction. *Mon. Wea. Rev.*, 138(4), 1307-1318.
40. Keith, E. and L. Xie, 2009: Predicting Atlantic Tropical Cyclone Seasonal Activity in April. *Weather and Forecasting*, 24(2), 436-455.

41. Liu, H. and L. Xie, 2009: A numerical study on the effects of wave-current-surge interactions on the height and propagation of sea surface waves in Charleston Harbor during Hurricane Hugo 1989, *Continental Shelf Research*, 29, 1454-1463. doi:10.1016/j.csr.2009.03.013.
42. Sweet, W. V, Morrison, J. M., Liu, Y., Kamykowski, D., Schaeffer, B. A, Xie, L., Banks, S., 2009: Tropical instability wave interactions within the Galapagos Archipelago. *Deep-Sea Res.*, 56, 1217-1229.
43. Davis, Neil, Bowden, Jared, Semazzi, Fredrick, Xie, Lian, Onol, Baris, 2009: Customization of RegCM3 Regional Climate Model for Eastern Africa and a Tropical Indian Ocean Domain. *J. of Climate*, 22, 3595-3616.
44. Deng, Z., Lian Xie, Bin Liu, Kejian Wu, Dongliang Zhao, and Ting Yu, 2009: The interactions between winds and ocean surface currents over the global ocean. *Ocean Modelling*, 29, 261-268.
45. Elinor Keith and Lian Xie, 2009: Predicting Atlantic Tropical Cyclone Seasonal Activity in April. *Weather and Forecasting*, 24, 436-455, DOI:10.1175/2008/WAF2222139.1
46. Xie, L., H. Liu and M. Peng, 2008: The effect of wave-current interactions on the storm surge and inundation in Charleston Harbor during Hurricane Hugo 1989. *Ocean Modelling*, 20, 252-269.
47. Xu, X., L. Xie, X. Cheng, J. Xu, X. Zhou, G. Ding, 2008: Application of an Adaptive Nudging Scheme in Air Quality Forecasting in China. *J. of Applied Meteorology and Climatology*, 47, 2105-2114.
48. Lynch, A., L. Lestak, P. Uotila, E. Cassano, L. Xie, 2008: A factorial analysis of the storm surge flooding in Barrow, Alaska. *Monthly Weather Review*, 136, 898-912.
49. Xia, Meng, Lian Xie, and L.J. Pietrafesa, 2008: A numerical study of storm surge in the Cape Fear River Estuary and adjacent coast. *J. of Coastal Research*, 24, 159-167.
50. Schaeffer, B., J. Morrison, D. Kamykowski, G. Feldman, L. Xie, Y. Liu, and B. Sweet, 2008: Phytoplankton biomass distribution and identification of productive habitats within the Galapagos Marine Reserve by MODIS, a surface acquisition system, and in situ measurements. *Remote Sensing of Environment*. June 16, 2008 (Vol. 112, No. 6, doi:10.1016/j.rse.2008.03.005)
51. Sweet, W.V., J.M. Morrison, Y. Liu, D. Kamykowski, D.A. Schaeffer, L. Xie, S. Banks, 2009: Tropical instability wave interactions with the Galapagos Archipelago. *Deep Sea Res.* doi:10.1016/j.dsr.2009.02.005 .
52. Peng, S., L. Xie, L.J. Pietrafesa, 2007: Correcting the errors in the initial conditions and boundary conditions of storm surge simulation using an Adjoint Optimal Technique. *Ocean Modelling*, 18, 175-193.
53. Liu, Huiqing, Lian Xie, L.J. Pietrafesa, S. Bao: 2007: Sensitivity of Wind Waves to Hurricane Wind Characteristics. *Ocean Modelling*, 18, 37-52.
54. Xia, Meng and Lian Xie, 2007: Numerical Modeling of Cape Fear River Estuary Plume. *Estuaries and Coasts*, 30, 698-709.
55. Xia, Meng, Lian Xie, and L.J. Pietrafesa, 2007: A numerical study of storm surge in the Cape Fear River Estuary and adjacent coast. *J. of Coastal Research* (in press).
56. Xie, L., X. Liu, L.J. Pietrafesa, 2007: Effect of bathymetric curvature on the Gulf Stream instability in the vicinity of the Charleston Bump. *J. of Physical Oceanography*, 37, 452-475.
57. Xie, L. and T. Yan, 2007: North Pacific typhoon track patterns and their potential connection to Tibetan Plateau snow cover. *Natural Hazards*. DOI : 10.1007/s11069-006-9087-9.
58. Xu, X., X. Shi, L. Xie, Y. Wang, 2007: Consistency of interdecadal variation in the summer over eastern China and Heterogeneity in spring surface air temperature. *J. Meteorological Society of Japan*, 85A, 311-323.
59. Shi, XH, XD Xu, L. Xie, 2008: Characteristics of climate change in the "significant impact zone" affected by aerosols over eastern China in warm seasons. *SCIENCE IN CHINA SERIES D-EARTH SCIENCES*. 51, 730-739.
60. Shi, XH, XD Xu, L. Xie, 2007: Reliability analyses of anomalies of NCEP/NCAR reanalyzed wind speed and surface air temperature in climate change research in China. *ACTA METEOROLOGICA SINICA*. 21, 320-333.

61. Lin, J., L. Xie, L.J. Pietrafesa, J. Ramus, Hans Paerl, 2007: Water quality gradients across Albemarle-Pamlico estuarine system: seasonal variation and model applications. *J. of Coastal Research*, 23, 213-229.
62. Anyah, R.O., Fredrick H. M. Semazzi, and Lian Xie, 2006: Simulated physical mechanisms associated with climate variability over Lake Victoria basin in East Africa, *Monthly Weather Review*, 134, 3588–3609.
63. Jing Lin, Lian Xie, Len J. Pietrafesa, Jian Shen, Michael A. Mallin and Michael J. Durako, 2006: Dissolved oxygen stratification in two micro-tidal partially-mixed estuaries, *Estuarine, Coastal and Shelf Sciences*, 70, 423-437. doi:10.1016/j.ecss.2006.06.032.
64. Xia, M., Lian Xie, L.J. Pietrafesa, 2006: Cape Fear River Estuary Plume Modeling: Model Configuration and Sensitivity Experiments. In M.L. Spaulding eds., *Estuarine and Coastal Modeling* 9, 88-104, doi 10.1061/40876(209)6.
65. Peng, S.-Q., and L. Xie, 2006: Effect of Determining Initial Conditions by Four-Dimensional Variational Data Assimilation on Storm Surge Forecasting. *Ocean Modelling*, 14, 1-18
66. Lin, J., L. Xie, and L.J. Pietrafesa, J.S. Ramus, and H.W. Paerl, 2006: Water Quality Gradients across Albemarle-Pamlico Estuarine System: Seasonal Variations and Model Applications. *Journal of Coastal Research*, 23, 213-229.
67. Peng, M., L. Xie, L.J. Pietrafesa, 2006: Tropical cyclone induced asymmetry of sea level surge and fall and its presentation in a storm surge model with parametric wind fields. *Ocean Modeling*, 14, 81-101.
68. Peng, M., Xie, L. and L.J. Pietrafesa, 2006: A Numerical Study on Hurricane Induced Storm Surge and Inundation in Charleston Harbor, South Carolina. *J. Geophys. Res.*, 111, C08017, doi:10.1029/2004JC002755.
69. Bohm, E., L.J. Pietrafesa, L. Xie, J. Churchill, T.S. Hopkins, and J. R. Hendricks, 2006: Continental Margin Slope Sea Level and Flow Field Variability Induced by Lateral Movements of the Gulf Stream in the Southern Middle Atlantic Bight, *Progresses in Oceanography* (in press).
70. Xie, L., S. Bao, L.J. Pietrafesa, K. Foley and M. Fuentes, 2006: A Real-Time Hurricane Surface Wind Forecasting Model: Formulation and Verification. *Monthly Weather Review*, 134, 1355-1370.
71. Xie L., T. Yan, L. J. Pietrafesa, T. Karl, X. Xu, 2005: Relationship between western North Pacific typhoon activity and Tibetan Plateau winter and spring snow cover, *Geophys. Res. Lett.*, 32, L16703, doi:10.1029/2005GL023237.
72. Xu, X., L. Xie, G. Ding, and L. Bian, 2005: Beijing air pollution project to benefit 2008 Summer Olympic Game. *Bulletin of American Meteorological Society*, 86, 1543-1544.
73. Xu X., Shi X., Xie L., Ding GA, Miao QJ, Ma JZ, Zheng XD, 2005: Spatial character of the gaseous and particulate state compound correlation of urban atmospheric pollution in winter and summer. *Science in China, Series d-Earth Sciences*, 48 (suppl. 2), 64-79.
74. Xu, X., L. Xie, X. Zhang, and W. Yao, 2005: A Mathematical Model for Forecasting Tropical Cyclone Tracks. *Nonlinear Analysis Series B: Real World Applications*, 7, 211-224.
75. Xie, L., T. Yan, L. Pietrafesa, J. Morrison, and T. Karl, 2005: The climatology and interannual variability of regional landfall hurricane frequency and its association with North Atlantic hurricane tracks. *Journal of Climate*, 18: 5370-5381.
76. Xie, L., T. Yan, and L.J. Pietrafesa, 2005: The effect of Atlantic sea surface temperature dipole mode on hurricanes: Implications for the 2004 Atlantic hurricane season. *Geophysical Research Letters*, 32, doi: 10.1029/2004GL021702.
77. Xu, X., G. Ding, L. Xie and L. Bian, 2004: Characteristics of Atmospheric Environmental of Boundary Layer Structure of City Community in Becapex and Integrate Influence. *ACTA Meteorological Sinica*, 62, 663-671.
78. Guan, C. and L. Xie, 2004: A unified linear parameterization of the drag coefficient over the surface of the ocean. *J. Physical Oceanography*, 34, 2847-2851.

79. Xie, L., 2004: Air-sea interactions associated with mesoscale weather systems. In Observation, Theory and Modeling of Atmospheric Variability. X. Zhu edited, World Scientific Series on Meteorology of East Asia, World Scientific Publishing Co., 612.
80. Xie, L., L.J. Pietrafesa, and M. Peng, 2004: Incorporation of a mass-conserving inundation scheme into a three-dimensional storm surge model. *J. Coastal Research*, 20, 1209-1223.
81. Bao, S., L. Xie and S. Raman, 2004: A numerical study of a TOGA-COARE Squall-line using a coupled mesoscale atmosphere-ocean model. *Advances in Atmospheric Sciences*, 21, 707-714.
82. Peng, M., L. Xie, and L.J. Pietrafesa, 2004: A numerical study of storm surge and inundation in the Croatan-Albemarle-Pamlico Estuary System. *Estuarine, Coastal and Shelf Science*, 59, 121-137.
83. Song, Y., F. Semazzi, L. Xie, and L.J. Ogallo, 2004: A coupled regional climate model for Lake Victoria basin of east Africa. *International Journal of Climate*, 24, 57-75.
84. Bao, S. S. Raman, and L. Xie, 2003: Numerical simulation of the response of the ocean surface layer to precipitation. *Pure and Applied Geophysics*, 160, 2419-2446.
85. Xie, L., L.J. Pietrafesa, and K. Wu, 2003: A numerical study of wave-current interaction through surface and bottom stresses: Coastal ocean response to Hurricane Fran 1996. *J. Geophys. Res.*, 108, (C2, 3049).
86. Pietrafesa, L.J. Xie, L., D. Dickey, M. Peng, S. Bao, 2003. The North Carolina State University coastal and estuary storm surge and flood prediction system. *Ecosystems and Sustainable Development*, 4, 100-109.
87. Manghnani, V., B. Subrahmanyam, L. Xie and J. M. Morrison, 2003: Numerical simulation of seasonal and interannual Indian Ocean upper-layer circulation using MICOM, *J. Geophysical Research*, 108, No. C7, 3240.
88. Xie, L., L.J. Pietrafesa, and D. Dickey, 2002: The mathematical architecture for a coastal estuary modeling and environmental prediction system. Solutions to Coastal Disasters, 441-455.
89. Pietrafesa, L.J., L. Xie, E. Buckley, D. Hilderbrand, M. Peng, 2002: The need for a coastal estuary/inland flood risk index. Chapter in Computer Simulation in Hazard and Risk Mitigation. Wit Press.
90. Pietrafesa, L.J., C.N. Flagg, L. Xie, G.L. Weatherly, J.M. Morrison, 2002: The winter/spring 1996 OMP current, meteorological, sea state and coastal sea level fields, *Deep-Sea Research*, 49, 4331-4354.
91. Bright, R., L. Xie, and L. J. Pietrafesa, 2002: Evidence of the Gulf Stream's influence on tropical cyclone intensity. *Geophysical Research Letters*, **29**, 48/1-48/4.
92. Xie, L., L.J. Pietrafesa, and K. Wu, 2002: Interannual and decadal variability of landfalling tropical cyclones in the Southeast coastal states of the United States. *Advances in Atmospheric Sciences*, 19, 677-686.
93. Song, Y., F. Semazzi, and L. Xie, 2002: Development of a coupled regional climate simulation model for the Lake Victoria basin. In The East African great Lakes: Limnology, Paleolimnology and Biodiversity, E.O Odada and D.O. Olago (eds.) Kluwer Academic Publishers, 153-186.
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95. Xie, L., K. Wu, L.J. Pietrafesa, and C. Zhang, 2001: A numerical study of wave-current interaction through surface and bottom stresses: Part I: Wind-driven circulation in the South Atlantic Bight under uniform winds. *J. Geophys. Res.*, 106, 16841-16856.
96. Pietrafesa, L.J., D. Dickey, L. Xie, 2001: Flooding due to Hurricanes Dennis and Floyd. Chapter 2 in Environmental and Socio-economic impacts of Hurricane Floyd. Carolina Coastal Press.
97. Manghnani, V., J. Morrison and L. Xie, 2001: Heat budget of the Indian Ocean using TOPEX/Poseidon observations and ocean model simulations. *Deep Sea Res.* 49, 1459-1480.

98. Xie, L., J. Morrison, and X. Liu, 2000: Sensitivity of tropical Pacific sea surface temperature to atmospheric forcing in an isopycnic coordinate ocean model. *Global Atmosphere-Ocean System*, Vol. 7, 229-247.
99. Xie, L., L.J. Pietrafesa, C. Zhang, 1999: Subinertial Response of the Gulf Stream system to Hurricane Fran 1996. *Geophysical research Letters*, 26, 3457-3460.
100. Xie, L., L.J. Pietrafesa, 1999: Systemwide modeling of wind and density driven circulation in the Croatan-Albemarle Pamlico estuary system. Part I: Model configuration and testing. *J. Coastal Research*, 15, 1163-1177.
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109. Pietrafesa, L. J. and Lian Xie, Linkages between Estuaries and coastal waters on synoptic scales. SECOR, 1994, Charleston, South Carolina.
110. Pietrafesa, L. J. and Lian Xie, Wind-induced SST variability over the Carolina Shelf. Ocean Sciences Meeting, February 21-25, 1994, San Diego, California.
111. Xie, Lian, L. J. Pietrafesa and Sethu Raman, Evidence and a mechanism of synoptic-time scale air-sea interaction off the east coast. AGU Spring Meeting. May 23-27, 1994, Baltimore, Maryland.
112. Xie, Lian, R. Bleck and X. Cheng, 1994: An isopycnic-coordinate ocean model for the Florida current. 1994 MICOM Workshop, January 19-22, Miami, Florida.
113. Xie, Lian and Rainer Bleck, 1991: A limited area step-mountain coordinate model for flow around the Tibetan Plateau. Preprints, 1st International Conference on Winter Storms, January, 1991. New Orleans, American Meteorological Society.

Research Grants (1997-2015)

#	CO-PIs	Project Title	Agency	Amount	Period
1	Parker, Lackmann, Xie	Improving Understanding and Prediction of High Impact Weather Associated with Low-Topped Severe Convection in the Southeastern U.S.	NOAA	\$375,000	05/01/2014 – 04/30/2017
2	Fuentes, Reich, Semazzi, Xie	Spatial-Temporal Models and Methods for Big Nonstationary Multivariate Data on Euclidian Spaces	NSF	\$53,757	07/15/2014 – 06/30/2017

		and the Sphere			
3	L. Xie, M. Fuentes, F. Semazzi, P.Liu	Incorporating Climate Change Effects into Next-Generation Coastal Inundation Maps: An Integrated Approach	NOAA	\$260,000	09/01/2011 – 8/31/2015
4	L. Xie	Real-Time Coastal Ocean Forecasting in Support of Management of Coastal Resources and Emergency in the SECOORA Region	SECOORA	\$195,000	06/01/2011 – 08/31/2015
5	Fuentes, Montserrat, Reich, Brian James, Xie, Lian	Space-time Modeling for Linking Climate Change, Pollutant Exposure, Built Environments, and Health Outcomes	NIH	\$369,755	08/26/2011 – 5/31/2013
6	F. Semazzi, L. Xie	Strengthening Meteorological Services on Lake Victoria to Enhance Safety of Navigation & Exploitation of Natural Resources	Lake Victoria Commission	\$100,539	04/15/2011 – 10/30/2011
7	Fuentes, M, Reich, B., Shea, D., Semazzi, F., Xie, L.	Collaborative Research: RNMS Statistical Methods for Atmospheric and Oceanic Sciences	NSF	\$968,587	10/01/2011 – 09/30/2013
8	L. Xie	Regional storm surge and inundation model testbed	NOAA	\$270,000	01/01/2008 – 6/30/2011
9	F. Semazzi L. Xie	A Modeling and Empirical Study of the Climate of the Lake Victoria Basin of Eastern Africa	NSF	\$520,097	01/15/2011 – 12/31/2013
10	L. Xie M. Fuentes F. Semazzi	Downscaling Climate Change Impacts on Wind Energy Resources in the Contiguous United States	NCSU	\$14,340	01/01/2011 – 12/31/2011
11	R. He L. Xie G. Lackmann	Implementation of Regional Integrated Ocean Observing Systems Support of RCOOS Development In SECCORA - Circulation Modeling	SECOORA	\$160,000	09/01/2010 – 08/31/2011
12	L. Xie	Development of a regional model for Mars atmosphere	NIA	\$334,618	08/15/2007 – 09/15/2010
13	Lackmann, G. Semazzi, F. Aiyyer, A.	High-Resolution Modeling to Assess Tropical Cyclone Activity in Future Climate	DOE	\$600,000	08/01/2007 – 07/31/2012

	Xie, L.	Regimes			
14	Cudaback, C. Xie, L. Eggleston, D.	Oyster Dispersal and Meta-Population Dynamics in Pamlico Sound, Part I: Larval Transport	SeaGrant	\$128,585	02/01/2006 – 01/31/2009
15	Fuentes M., Reich B., and L. Xie	Multivariate Space-time Models and Methods to Combine Large Disparate Spatial Data and Numerical Models	NSF	\$260,000	05/15/2007-05/15/2012
16	Lackmann, G., L. Xie, M. Parker	Improving Understanding and Prediction of Warm Season Precipitation Systems in the Southeastern and Mid-Atlantic Regions	NOAA	\$375,000	06/01/07 – 05/31/11
17	Semazzi F., L. Xie, P. Liu	NOAA Interdisciplinary Scientific Environmental Technology(ISET) Cooperative Research and Education Center	NOAA	\$1,000,000	09/01/06 – 08/31/11
18	Pietrafesa, Xie	Climate and Weather Impacts on Society and the Environment (CWISE)	NOAA	1.675 million	09/01/03 – 08/31/07
19	Xie, L.	Intercontinental Transport of Air Pollution	EPA	115,000	07/01/02 – 07/31/06
20	Pietrafesa, Xie	Carolinas Coastal Ocean Observing and Prediction System	NOAA	5 million	06/01/02 – 05/31/07
21	Xie, Pietrafesa	Coastal Ocean Research and Monitoring Program (CORMP)	NOAA	2.5 million	06/01/02 – 05/31/07
22	Semazzi, Xie	Variability of the eastern Africa regional coupled climate system.	NSF	555,875	09/01/01 – 08/31/04
23	Semazzi, Xie	Predicting the variability of the eastern Africa regional coupled climate system.	NSF	560,000	09/01/04 – 08/31/07
24	Xie, Kaplan, Pietrafesa, Raman	Inland flooding due to hurricanes	NOAA/ NWS	41,000	01/01/2004 – 12/31/2005
25	Lackmann, Riordan, Xie	Improving cold season quantitative precipitation forecasting in the Carolinas and Virginia	NOAA	375,000	07/01/03 – 06/30/06
26	Pietrafesa, Xie, Dickey	Determination of a recruitment index	NOAA	75,000	09/01/02 – 08/31/04

27	Morrison,Xie, Kamykowsky	Connectivity and Upwelling Dynamics In the Galapagos Marine Reserve (GMR)	NASA	1million	05/01/04 – 04/30/07
28	Lin, Xie	Development of a sediment transport model for Chesapeake Bay	VIMS	10,000	3/01/04 – 08/01/06
29	Dickey, Xie, Pietrafesa	Project IFLOW – Storm surge model integration component	Sea Grant	100,000	08/01/03 – 07/31/06
30	Xie	Support for international workshop on dust storms and their effects on human health	USDA	5,000	10/01/02 – 07/31/03
31	Pietrafesa, Xie	A Risk Assessment Tool: Predicting Coastal Flooding for Operational Purposes	NOAA	465,000	01/01/01 – 12/31/03
32	Morrison, Xie	WOCE AIMS: Northern Indian Ocean Data Analysis and Synthesis	NSF	400,000	03/01/00 – 12/31/03
33	Riordan, Lackmann, Xie	Improving forecasts of topographically-forced weather systems in the Carolinas and Virginia	NOAA	375,000	05/01/00 – 04/30/03
34	Xie	Workshop on Dust Storms and Their Effects on Human Health	NASA	10,000	11/01/02 – 12/31/02
35	Xie	Workshop on Dust Storms and Their Effects on Human Health	USDA	5,000	11/1/02 – 7/31/03
36	Xie	Workshop on Dust Storms and Their Effects on Human Health	NOAA	2,500	11/01/02 – 07/31/03
37	Pietrafesa, DeMaster, Xie	Ocean Margins Program data analysis and synthesis	NSF	92,624	06/01/98 – 05/31/01
38	Raman, Xie	A numerical study of interactions between mesoscale convective systems and ocean mixed layer in the Western Pacific Warm Pool	NSF	340,679	04/01/97 – 12/31/01
39	Wolcott, Pietrafesa, Xie	Real-time data for critical decisions about NC’s coastal waters: “proof of concept”	Z. Smith Reynolds	64,896	06/01/97 – 12/31/01

COURSES TAUGHT

MEA421: ATMOSPHERIC DYNAMICS I

MEA421L: ATMOSPHERIC DYNAMICS I LAB

MEA467: MARINE METEOROLOGY

MEA726: AIR-SEA INTERACTION

MEA593: TROPICAL METEOROLOGY

MEA593: ATMOSPHERIC GENERAL CIRCULATION

MEA312: ATMOSPHERIC THERMODYNAMICS

OUTREACH AND COMMUNITY SERVICE ACTIVITIES

President (volunteer), North Carolina China Center

President (volunteer), Carolina China Council

Board (volunteer), Chinese Association for Science and Technology-
North Carolina Chapter

Past Principal (volunteer), Raleigh Academy of Chinese Language

Past Board Member (volunteer), Chinese American Friendship
Association at the Triangle Area.

Advisor, NCSU Chinese Student and Scholar's friendship Association

2008 Beijing Olympics Weather Support Team

Advisory Board, NC State Confucius Institute

Advisory Board, Durham Sister City Committee