

Curriculum Vitae

November 10, 2009

Name: **Young-Kwon Lim**
Affiliation: Center for Ocean-Atmospheric Prediction Studies (COAPS),
Florida State University
Status: Assistant Research Scientist (research faculty)
Work Address: 2035 E. Paul Dirac Drive
R.M. Johnson Building – Suite 231
Center for Ocean-Atmospheric Prediction Studies (COAPS)
Florida State University
Tallahassee, FL 32306-2840
Voice) (850) 644-9138
Fax) (850) 644-4841
E-mail) lim@coaps.fsu.edu / yylim@fsu.edu / yklim@met.fsu.edu

Education and Employments:

- Assistant Research Scientist (research faculty), COAPS, Florida State University, September 2007 – present.
- Postdoctoral researcher, COAPS, Florida State University, July 2005 – September 2007.
- Postdoctoral researcher, Meteorology, Florida State University, July 2004 – July 2005.
- Ph.D., Meteorology, Florida State University, U. S. A., January 2000 – May 2004.
- M.S., Atmospheric Sciences, Seoul National University, Korea, February 1997.
- B.S., Earth Science, Seoul National University, Korea, February 1995.

Research Areas and Interests:

- Multi-model high-resolution climate prediction (dynamical and statistical models)
- Detection, attribution, and model experiments on the impact of land uses (e.g., vegetation and urban development) on surface climate change
- Climate application to atmosphere-agricultural model and crop yield simulation
- Diagnosis and prediction of monsoon, ENSO, and long-term climate variability and change
- Urban parameterization for local climate change simulation
- Seasonal forecast of tropical cyclone frequency and intensity using numerical model and hurricane detection algorithm
- Multi-model ensemble technique
- Numerical model simulations and evaluations

Scientific Work Experiences

- Assistant Research Scientist (Sep/07-present) and Postdoctoral research associate (Jul/05-Sep/07), COAPS, Florida State University
 - 1) Multi-model regional climate simulation (dynamical and statistical models)
 - 2) Application of the simulated regional climate to the agricultural crop model
 - 3) Model study on regional surface climate change in response to land-cover types
 - 4) Hurricane detection algorithm from the numerical model output
 - 5) Global model simulations and model evaluations
 - 6) Decadal-scale surface climate variability and change
- Postdoctoral research associate, Meteorology, Florida State University, Jul/2004-Jul/2005
 - 1) Study on surface climate change response to land-cover types and urbanization
 - 2) Statistical climate prediction of monsoon, surface warming, and ENSO events
- Teaching assistant, Meteorology, Florida State University, Jan/2004-Apr/2004

Class: “Advanced Dynamic Meteorology” (graduate course)

Class: “Dynamic Meteorology” (undergraduate course)
- Research assistant, Meteorology, Florida State University, Jan/2000-Dec/2003
 - 1) Diagnosis on monsoon variability (Seasonal variation of the Asian-Australian monsoon and the American monsoon, ENSO-monsoon (Asian, American) relationship, and the intraseasonal variability associated with the Madden-Julian Oscillation)
 - 2) Climate prediction (Medium to long-range prediction of monsoon and ENSO)
- Research scientist, Meteorological Research Institute, Korea, Jan/1998-Nov/1999.
 - 1) Climate diagnostics and prediction (Analysis on the greenhouse forced global warming, the Asian-Australian monsoon variability, climate prediction of monsoon precipitation)
 - 2) Urban climate model (Simulation of the atmospheric circulation and pollutant diffusion in the urban area with consideration of terrain effect)

Teaching Experience

- Advanced dynamic meteorology (spring2004, Florida State University)
- Dynamic meteorology (spring2004, Florida State University)
- Interactive data analysis (computer lab. assistant, fall2003, Florida State University)

Involved Projects Record

- Decision support system for reducing agricultural risks caused by climate variability (PI: Dr. James J. O’Brien), USDA CSREES (2009-38890-19911), Jul/2008-present
- NOAA Applied Research Center (ARC) regional assessment of interannual climate impacts and support for NOAA ocean observations (PI: Dr. E. Chassignet), NOAA (NA06OAR4310070), Jun/2006-present.
- Comparison of NCEP/NCAR and ERA-40 surface temperature trend (PI: Dr. Ming Cai), NSF (ATM-0403211), Jul/2004-Jul/2005.
- Studies on the Asian-Australian monsoon variability and predictability using physical decomposition (PI: Dr. Kwang-Yul Kim), NSF (ATM-0353494), Mar/2004-Apr/2007.

- Studies in long-term noise statistics, regional climate sensitivity and predictability (PI: Dr. Gerald R. North and Dr. Kwang-Yul Kim), DOE (DE-FG03-98ER62610), Jan/2000-Sep/2003.
- Studies and application of cyclostationary empirical orthogonal functions (PI: Dr. Kwang-Yul Kim), NSF (ATM-9613748), Jan/2000-May/2003.

Proposals in progress or pending

- Evaluation of the CMIP5 runs in simulating intraseasonal to interdecadal climate variability and statistical downscaling of climate change projections over the Americas (PI: Dr. Young-Kwon Lim), pending in NOAA CPPA, ~\$140,000 for two years.
- Assessing the impact of a changing climate on the wild fire potential in the southeast US (co-PI: Dr. Young-Kwon Lim, PI: Dr. V. Misra), pending in Department of Energy, ~\$125,000 for a year.

Publications

Book chapter

Baigorría, G. A., **Y.-K. Lim**, J. W. Jones, and J. J. O'Brien, 2009: Downscaling global circulation models for its use at local and regional levels. Book chapter on academic collaborations between the World Meteorological Organization (WMO) – Southeast Climate Consortium (SECC). In press.

Paper in progress or under review

Lim, Y.-K., and coauthors, 2009: Land surface model response to different atmospheric forcings and land uses. Paper in progress.

Published or in press

Shin, D. W., G. Baigorría, **Y.-K. Lim**, S. Cocke, T. E. LaRow, J. J. O'Brien, and J. W. Jones, 2009: Assessing maize and peanut yield simulations with various climate data in the southeast US. accepted in *J. Appl., Meteor. Climatol.*

Lim, Y.-K., S. Cocke, D. W. Shin, J. T. Schoof, T. E. LaRow, and J. J. O'Brien, 2009: Downscaling large-scale NCEP CFS to resolve the fine-scale seasonal precipitation and extremes for the crop growing seasons over the southeastern United States. *Clim. Dyn.*, doi:10.1007/s00382-009-0671-z.

Schoof, J. T., D. W. Shin, S. Cocke, T. E. LaRow, **Y.-K. Lim**, and J. J. O'Brien, 2009: Dynamically and statistically downscaled seasonal temperature and precipitation hindcast ensembles for the southeastern USA. *Int. J. Climatol.* **29**, 243-257, doi:10.1002/joc.1717.

Pielke, R. A., C. A. Davey, D. Niyogi, S. Fall, J. Steinweg-Woods, K. Hubbard, X. Lin, M. Cai, **Y.-K. Lim**, H. Li, J. Nielsen-Gammon, K. Gallo, R. Hale, J. Angel, R. Mahmood, S. Foster, R. T. McNider, and P. Blanken, 2009: Reply to comment by David E. Parker et al. on

- “Unresolved issues with the assessment on multi-decadal global land surface temperature trends”. *J. Geophys. Res.*, **114**, D05105, doi:10.1029/2008JD010938.
- Lim, Y.-K.**, M. Cai, E. Kalnay, and L. Zhou, 2008: Impact of vegetation types on surface temperature change. *J. Appl. Meteor. Climatol.*, **47**, 411-424.
- LaRow, T. E., **Y.-K. Lim**, D. W. Shin, S. Cocke, and E. P. Chassignet, 2008: Atlantic basin seasonal hurricane simulations. *J. Climate*, **21**, 3191-3206.
- Kalnay, E., M. Cai, M. Nunez, and **Y.-K. Lim**, 2008: Impacts of urbanization and land surface changes on climate trends. *International Association for Urban Climate*, **27**, 5-9.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, T. E. LaRow, J. T. Schoof, J. J. O’Brien, and E. P. Chassignet, 2007: Dynamically and statistically downscaled seasonal simulations of maximum surface air temperature over the southeast United States. *J. Geophys. Res – Atmosphere*, **112**, D24102, doi:10.1029/2007JD008764.
- Lim, Y.-K.**, and K.-Y. Kim, 2007: ENSO impact on the space-time evolution of the regional Asian summer monsoons. *J. Climate*, **20**, 2397-2415.
- Pielke, R. A., C. A. Davey, D. Niyogi, S. Fall, J. Steinweg-Woods, K. Hubbard, X. Lin, M. Cai, **Y.-K. Lim**, H. Li, J. Nielsen-Gammon, K. Gallo, R. Hale, J. Angel, R. Mahmood, S. Foster, R. T. McNider, and P. Blanken, 2007: Unresolved issues with the assessment of multi-decadal global land-surface temperature trends. *J. Geophys. Res.-Atmosphere*, **112**, D24S08, doi:10.1029/2006JD008229.
- Lim, Y.-K.**, and K.-Y. Kim, 2006: A new perspective on long-range prediction of monsoon precipitation. *J. Climate*, **19**, 4840-4853.
- Lim, Y.-K.**, M. Cai, E. Kalnay, and L. Zhou, 2005: Observational evidences of sensitivity of climate changes to land types and urbanization. *Geophys. Res. Lett.* **32**, L22712, doi:10.1029/2005GL024267.
- Lim, Y.-K.**, K.-Y. Kim, and H.-S. Lee, 2002: Temporal and spatial evolution of the Asian summer monsoon in the seasonal cycle of synoptic fields. *J. Climate*, **15**, 3630-3644.
- Cho, H.-M., **Y.-K. Lim**, J.-W. Kim, J.-K. Kim and J.-Y. Kim, 2000: The features of global atmospheric CO₂ distribution pattern. *J. Korean Meteor. Sci.*, **36**, 167-178.
- Lim, Y.-K.**, S.-N. Oh, W.-T. Yun, and Y.-S. Chun, 2000: A study on the simulation of three-dimensional wind field considering complex terrain and land uses in the region of Seoul. *J. Korean Meteor. Sci.*, **36**, 229-244.
- Kang, I.-S., C.-H. Ho, **Y.-K. Lim** and K.-M. Lau, 1999: Principal modes of climatological seasonal and intraseasonal variations of the Asian summer monsoon. *Mon. Wea. Rev.*, **127**, 322-340.

Other Publications

- Lim, Y.-K.**, 2008: Applied meteorology in southeastern United States: Application to primary industry and prevention of hurricane damage. *Meteorological technology and policy*, **1(2)**, 55-64.
- Lim, Y.-K.**, D. W. Shin, T. E. LaRow, and S. Cocke, 2007: Categorical predictability of regionalized surface temperature and precipitation over the southeast United States. *Research Activities in Atmospheric and Ocean Modeling*, CAS/JSC Working Group on Numerical Experimentation.

- Lim, Y.-K.**, T. E. LaRow, J. J. O'Brien, and D. W. Shin, 2006: Statistical downscaling of FSUGSM temperature over the southeast United States. *Research Activities in Atmospheric and Ocean Modeling*, CAS/JSC Working Group on Numerical Experimentation.
- Cai, Ming, **Y.-K. Lim**, and E. Kalnay, 2004: Report on the comparison of the surface temperature trends derived from the GHCN/CRU and the ERA40 and NNR reanalysis datasets. *Reports of the National Science Foundation*.
- Lim, Y.-K.**, 2004: Diagnosis of the Asian summer monsoon variability and the climate prediction of monsoon precipitation via physical decomposition. Doctoral dissertation. Department of Meteorology, Florida State University, 165pp.
- Lim, Y.-K.**, 1997: Characteristic features and spatial structures of the synoptic fields associated with Changma. Master's thesis, Department of Atmospheric Sciences, Seoul National University, 77pp.

Presentations:

- Lim, Y.-K.**, L. Stefanova, G. Baigorria, K.-H. Seo, D. W. Shin, S. Schubert, and H. Juang, 2009: Development of multi-model (dynamical and statistical) high resolution seasonal climate forecasting system. NOAA 34th annual climate diagnostics and prediction workshop (Oct. 26-30), Monterey, CA.
- Cocke, S., D. W. Shin, **Y.-K. Lim**, and T. E. LaRow, 2009: Seasonal simulation of Atlantic hurricanes using the FSU/COAPS climate model. 2009 AGU Joint Assembly (May 24-27), Toronto, Canada
- Lim, Y.-K.**, L. Stefanova, D. W. Shin, M. Griffin, and J. J. O'Brien, 2009: High-resolution real-time seasonal forecasts for the southeast US. Spring Southeast Climate Consortium (SECC) meeting (May 04-07), Griffin, GA.
- Shin, D. W., G. A. Baigorria, S. Cocke, **Y.-K. Lim**, T. E. LaRow, and J. J. O'Brien, 2009: Sensitivity of crop yields to various weather data. Climate prediction applications science workshop (Mar. 24-27), Norman, OK.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, T. E. LaRow, and J. J. O'Brien, 2008: Downscaling of the NCEP CFS retrospective precipitation forecasts over the southeast United States. NOAA 33rd annual climate diagnostics and prediction workshop (Oct. 20-24), Lincoln, NE.
- Lim, Y.-K.**, J. J. O'Brien, D. W. Shin, S. Cocke, T. E. LaRow, and E. P. Chassignet, 2008: Regional climate simulation of seasonal surface temperature and precipitation by downscaling approach over the southeast United States. Climate Information for Managing Risks workshop (Jun. 10-13), St. Pete Beach, FL.
- Shin, D. W., S. Cocke, **Y.-K. Lim**, T. E. LaRow, J. J. O'Brien, and E. P. Chassignet, 2008: Probabilistic crop yield simulations over the southeast US using the global and regional climate model products. Climate Information for Managing Risks workshop (Jun. 10-13), St. Pete Beach, FL.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, T. E. LaRow, J. J. O'Brien, and E. P. Chassignet, 2008: Regional-scale seasonal simulation of temperature and precipitation by downscaling approach over the southeast United States. Spring Southeast Climate Consortium (SECC) (Mar. 20-22) meeting, Gainesville, FL.

- Lim, Y.-K.**, 2008: Eigen techniques for climate statistics analysis: Cyclostationary empirical orthogonal function. The 6th Asian-Pacific Climate Network workshop (Feb. 20-22), Seoul, Korea.
- Lim, Y.-K.**, 2008: Application of CSEOF to monsoon climate analysis and prediction (Feb. 20-22). The 6th Asian-Pacific Climate Network workshop, Seoul, Korea.
- Lim, Y.-K.**, 2008: Regional climate simulation of surface temperature and precipitation by downscaling approach over the southeast United States and its possible application to Korea. Invited presentation at Korean Meteorological Administration / Meteorological Research Institute (Feb. 19), Seoul, Korea.
- LaRow, T. E., **Y.-K. Lim**, D. W. Shin, S. Cocke, J. J. O'Brien, and E. P. Chassignet, 2007: High resolution ensemble Atlantic basin seasonal hurricane simulations. NOAA 32nd annual climate diagnostics and prediction workshop (Oct. 22-26), Tallahassee, FL.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, T. E. LaRow, and J. J. O'Brien, 2007: Regional climate simulation of surface temperature and precipitation by downscaling approach over the southeast United States. NOAA 32nd annual climate diagnostics and prediction workshop (Oct. 22-26), Tallahassee, FL.
- Cai, M., **Y.-K. Lim**, and E. Kalnay, 2007: Use of reanalysis for detecting climate change sensitivity to land types and urbanization. NSF (National Science Foundation) sponsored workshop, Boulder, CO.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, T. E. LaRow, J. T. Schoof, J. J. O'Brien, and E. P. Chassignet, 2007: Dynamical and statistical downscaling of surface temperature and precipitation over the southeast US. Invited presentation at University of Florida, Gainesville, FL.
- Shin, D. W., J. G. Bellow, E. P. Chassignet, S. Cocke, T. E. LaRow, **Y.-K. Lim**, and J. J. O'Brien, 2007: Probabilistic crop yield forecasts using the upgraded FSU/COAPS regional climate model. WCRP Workshop on seasonal prediction, Barcelona, Spain.
- Cocke, S., T. E. LaRow, D. W. Shin, **Y.-K. Lim**, and J. J. O'Brien, 2007: Florida State University climate prediction studies. WGNE (Working group on numerical experimentation) workshop, Seattle, WA.
- Cai, M., **Y.-K. Lim**, and E. Kalnay, 2007: Land cover and regional response to global warming. The 87th American Meteorological Society conference, San Antonio, TX.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, T. E. LaRow, J. J. O'Brien, and E. P. Chassignet, 2006: Dynamical and statistical downscaling study. Invited presentation at Busan National University, Busan, Korea.
- Lim, Y.-K.**, and K.-Y. Kim, 2006: Analysis and prediction of Asian monsoon precipitation. Invited presentation at Busan National University, Busan, Korea.
- Lim, Y.-K.**, D. W. Shin, S. Cocke, and T. E. LaRow, 2006: Comparison of predictive skill between the statistically and the dynamically downscaled temperature and precipitation over the southeast United States. Fall AGU conference, San Francisco, CA.
- Cocke, S., D. W. Shin, T. E. LaRow, and **Y.-K. Lim**, 2006: Preliminary results on high resolution dynamical hurricane seasonal simulations. NOAA 31st annual climate diagnostics and prediction workshop, Boulder, CO.
- Pielke, R. A. Sr., C. Davey, D. Niyogi, K. Hubbard, X. Lin, M. Cai, S. Fall, **Y.-K. Lim**, H. Li, J. Neilsen-Gammon, K. Gallo, R. Hale, J. Angel, R. Mahmood, and S. Foster, 2006: Unresolved issues with the assessment of multi-decadal global land-surface temperature trends. The second International conference on global warming and the next ice age, Santa Fe, NM.

- Lim, Y.-K.**, D. W. Shin, S. Coker, T. E. LaRow, and J. J. O'Brien, 2006: Statistical downscaling of the FSUGSM temperature and precipitation over the southeast United States. Spring AGU conference, Baltimore, MD.
- M. Cai, **Y.-K. Lim**, and E. Kalnay, 2006: Use of reanalysis for detecting climate change sensitivity to land types and urbanization. AAG conference, Chicago, IL.
- Kalnay, E., M. Cai, H. Li, **Y.-K. Lim**, M. Nunez, and C. Ciappesoni, 2006: Impact of land-use on climate change. AAG conference, Chicago, IL.
- Lim, Y.-K.**, M. Cai, E. Kalnay, J. J. O'Brien, and L. Zhou, 2006: Observational evidences of sensitivity of climate changes to land vegetation types and urbanization. The 86th American Meteorological Society conference, Atlanta, GA.
- Kim, K.-Y., and **Y.-K. Lim**, 2004: Prediction of Asian summer monsoon precipitation: A new paradigm. Invited presentation at Seoul National University, Seoul, Korea.
- Kim, K.-Y., and **Y.-K. Lim**, 2001: Temporal and spatial evolution of the Asian summer monsoon. Invited presentation at the fall meeting of Korean Meteorological Society, Seoul, Korea.
- Lim, Y.-K.**, K.-Y. Kim, and H.-S. Lee, 2001: Temporal and spatial evolution of the Asian summer monsoon in the seasonal cycle of synoptic fields. The 81st American Meteorological Society conference, Albuquerque, NM.
- Lim, Y.-K.**, and I.-S. Kang, 1997: Evolution of spatial structures of the synoptic fields during the Asian summer monsoon period. Annual conference of Korean Meteorological Society, Busan, Korea.

Membership and Award:

- KASA (Korean Atmospheric Scientist in America) member, Jan/2000-present.
- KASA editor, Jan/2005-Dec/2005
- AGU (American Geophysical Union) member, Jan/2006-present.
- Reviewer of AGU journals, 2005-present.
- Reviewer of AMS (American Meteorological Society) journals, 2005-present.
- Dissertation grant awarded from Florida State University, Nov/2002-Jun/2003.