Kuang-Yu Chang

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Education

Ph.D. Atmospheric Science, University of California, Davis, 2017

M.S. Atmospheric Science, National Taiwan University, 2010

B.S. Atmospheric Science, National Taiwan University, 2009

Research Interests

Biometeorology; Biosphere–atmosphere interactions; Earth system modeling; Terrestrial ecosystem dynamics; Water and carbon cycles; Permafrost carbon dynamics

Professional Experience

Postdoctoral Fellow, Lawrence Berkeley National Lab 7/2017 – present.

Graduate Student Researcher, UC Davis 9/2012 – 6/2017.

Teaching Assistant and Reader, UC Davis 1/2015 – 3/2016.

(Courses included: Biometeorology, Atmospheric Dynamics, and Severe and Unusual Weather)

Research Assistant, National Taiwan University 8/2011 – 8/2012.

Meteorology Officer, Weather Wing, CAF R.O.C. 8/2010 – 7/2011.

Teaching Assistant, National Taiwan University 2/2009 – 6/2010.

(Courses included: Atmospheric Dynamics, Numerical Methods, and Applied Mathematics.)

Graduate Student Research Assistant, National Taiwan University 2/2009 – 6/2010.

Honors and Awards

Postdoctoral Fellow, LBNL 2017 – present.

Graduate Student Researcher, UC Davis 2012 – 2017.

funded by NSF MacroSystems project (jointed with MIT, MBL and Lehigh University)

Summer Graduate Student Researcher Award, UC Davis 2016.

Coulson Travel Award, UC Davis 2016.

Government Scholarship to Study Abroad, 2015.
Ministry of Education, Taiwan

Summer Graduate Student Researcher Award, UC Davis 2014.

Graduate Student Travel Award, UC Davis 2014.

Outstanding Student Thesis Award 2010.

National Taiwan University

Publications

Chang, K.-Y., and Riley, W. J.: No static temperature dependence of methane emissions from hysteretic substrate responses, **In co-author review**.

Xu, L., Schlosser, A. C., Kicklighter, D. W., Felzer, B. S., Paw U, K. T., and **Chang, K.-Y**.: Multi-Land Surface Models Sensitivity Study on Ecosystem Responses to Enhanced and Extended Drought Conditions, **In preparation**.

Chang, K.-Y., Riley, W. J., Brodie, E. L., McCalley, C. K., Crill, P. M., Grant, R. F. (2019): Methane production pathway regulated proximally by substrate availability and distally by temperature in a high-latitude mire complex, **In review**.

Chang, K.-Y., Riley, W. J., Crill, P., Grant, R., Rich, V., and Saleska, S. (2019), : Large carbon cycle climate sensitivities across a permafrost thaw gradient in subarctic Sweden, *The Cryosphere*, 13(2), 647–663. https://doi.org/10.5194/tc-13-647-2019

Chang, K.-Y., Xu, L., Starr, G. and Paw U, K. T. (2018), A drought indicator reflecting ecosystem responses to water availability: The Normalized Ecosystem Drought Index, *Agricultural and Forest Meteorology*, 250–251, 102–117, doi:10.1016/j.agrformet.2017.12.001

Chang, K.-Y., Paw U, K. T. and Chen, S.-H. (2018), Canopy profile sensitivity on surface layer simulations evaluated by a multiple canopy layer higher order closure land surface model, *Agricultural and Forest Meteorology*, 252, 192–207, doi:10.1016/j.agrformet.2018.01.027

Chang, K.-Y., Paw U, K. T. and Chen, S.-H. (2018), The importance of carbon-nitrogen biogeochemistry on water vapor and carbon fluxes as elucidated by a multiple canopy layer higher order closure land surface model, *Agricultural and Forest Meteorology*, 259, 60–74, doi:10.1016/j.agrformet.2018.04.009

Chang, K.-Y. (2018), Identifying, Quantifying and Predicting Ecosystem Responses to Changing Microclimatic Conditions Based on Observation and Simulation, Ph.D. dissertation, University of California, Davis, California, USA.

Chang, K.-Y. (2010),Western Boundary Current Intensification Modeling with Chebyshev and Immerse Boundary Methods. M.S. thesis, National Taiwan University, Taipei, Taiwan.

Conference Presentations and Abstracts

Chang, K.-Y., Riley, W. J., Crill, P., Grant, R., 2018: Large carbon cycle climate sensitivities across a permafrost thaw gradient in subarctic Sweden. Poster and Abstract, American Geophysical Union, Fall meeting, Washington, D.C., December 10-14, 2018.

Chang, K.-Y., Paw U, K. T., and Chen, S.-H., 2018: The Importance of Vertical Canopy Profiles on Ecosystem Exchanges in Soil-Plant-Atmosphere based Land Surface Models. Oral Presentation and Abstract, American Meteorological Society, Fourth Conference on Atmospheric Biogeosciences, Boise, Idaho, May 14-18, 2018.

Chang, K.-Y., Xu, L., and Paw U, K. T. (2017), A drought indicator reflecting ecosystem responses to water availability: The Normalized Ecosystem Drought Index, Fluxnet Workshop, Berkeley, California, June7-9, 2017.

Chang, K.-Y., Paw U, K. T., and Chen, S.-H., 2016: Nonlinear Terrestrial Feedbacks and Fluxes Exchange Investigated by a Multi-layer Higher order closure Turbulence Ecosystem Model. Poster and Abstract, American Geophysical Union, Fall meeting, San Francisco, California, December 12-16, 2016.

Xu, L., Schlosser, A. C., Kicklighter, D. W., Felzer, B. S., Paw U, K. T., and **Chang, K.-Y.**, 2016: Multi-Land Surface Models Sensitivity Study on Ecosystem Responses to Enhanced and Extended Drought Conditions. Poster and Abstract, American Geophysical Union, Fall meeting, San Francisco, California, December 12-16, 2016.

Chang, K.-Y., Paw U, K. T., and Chen, S.-H., 2016: The Nonlinear Terrestrial Interactions Investigated by a Multi-layer Higher order closure Ecosystem Model. Oral Presentation and Abstract, American Meteorological Society, Third Conference on Atmospheric Biogeosciences, Salt Lake City, Utah, June 20-24, 2016.

Chang, K.-Y., Paw U, K. T., and Chen, S.-H., 2015: The Integration of Ecological processes into a Multi-layer Higher order closure Land Surface Model. Poster and Abstract, American Geophysical Union, Fall meeting, San Francisco, California, December 14-18, 2015.

Chang, K.-Y., Paw U, K. T., and Chen, S.-H., 2014: The Integration of Vegetation Dynamics into a Multi-layer Higher-order closure Land Surface Model. Oral Presentation and abstract, American Meteorological Society 31st Conference on Agricultural and Forest Meteorology, Portland, Oregon, May 12-15, 2014.

Synergistic and Outreach Activities

Journal Reviewer:

Geoscientific Model Development; Atmosphere; Scientific Online Letters on the Atmosphere; Journal of Irrigation and Drainage Engineering; Advances in Meteorology; Journal of Atmospheric Science Research

Organizing Committee:

LBNL–EESA Climate Brownbag Seminar (co-organized with Alan Rhoades, Housen Chu, and Zexuan Xu)

Scientific Judge Committee:

Alameda County Science & Engineering Fair; Contra Costa County Science & Engineering Fair

Undergraduate Student mentor program:

UC Davis–LAWR mentorship