

Xingying Huang, Ph.D.

CONTACT INFORMATION	UC Santa Barbara 3308 Bren Hall Santa Barbara, CA 93106	Email: xyhuang@ucsb.edu Tel: (530)400-7638 Web: xingyhuang.github.io
RESEARCH INTERESTS	Climate change and extremes, climate modeling, global and regional climate impacts Climate variability and dynamics, Machine learning, Remote sensing, Geospatial data	
PROFESSIONAL APPOINTMENTS	Postdoctoral Researcher, UC Santa Barbara Earth Research Institute Bren School of Environmental Science & Management	Fall 2019 - present
	Postdoctoral Researcher, UC Los Angeles Department of Atmospheric and Oceanic Sciences Center of Climate Science	2017 - 2019
EDUCATION BACKGROUND	Ph.D., Atmospheric Science, University of California, Davis Minor in M.S. of Statistics with coursework completed Graduate researcher, UC Davis & Berkeley Lab. (2013 - 2016) Committee: Paul Ullrich (Chair, Advisor), Terry Nathan, Richard Grotjahn Travis O'Brien, & Daniel Feldman Dissertation: Studying regional climate with variable-resolution CESM	2016
	M.S., Remote Sensing, Beijing Normal University Advisor: Xiaowen Li (Academician of the Chinese Academy of Sciences) Honored graduate (Awarded by the College and Beijing city) Thesis: The evaluation and hotspot research focused on AMBRALS models	2013
	B.S., Geographical Information System, Wuhan University Graduated with honor (Top one of the program) Thesis: Development & application of a land-use database management system	2010
HONORS AND AWARDS	University of California, Davis Graduate program fellowship in Atmospheric Science (2013-2014) Beijing Normal University National Scholarship, Outstanding Graduate Award (2012, 2013) Academic Excellence Award (2011, 2012) Wuhan University Excellent Student of College Award (2007, 2008, 2009) National Inspirational Award (2007, 2008)	
CURRENT GRANTS AND PROPOSALS	Pending , NSF Disaster Resilience Research Grants (NSF 20-581): ARkStorm 2.0: Extreme storm scenarios for disaster resilience planning and emergency response exercises. \$400,000. (Co-PI) Awardee, Azure Compute Credit Grant , Microsoft. \$15,000. (2020-2021) Main Investigator , Mechanisms of Pacific decadal variability in ESMs: the roles of stochastic forcing, feedbacks & external forcing, DOE BER, DE-SC0019418	

PUBLICATIONS UNDER REVIEW	<p>[11] Huang, X., and Stevenson, S., 2020. The impact of future North Pacific mean circulation changes on western US precipitation extremes. In review.</p> <p>[10] Huang, X., 2020. Deep-learning based climate downscaling using the super-resolution method: a case study over western US, <i>Geoscientific Model Development</i>, In revision. https://doi.org/10.5194/gmd-2020-214</p>
PUBLISHED PEER-REVIEWED ARTICLES	<p>[9] Huang, X., Stevenson, S. and Hall, A.D., 2020. Future warming and intensification of precipitation extremes: A “double whammy” leading to increasing flood risk in California. <i>Geophysical Research Letters</i>, 47, e2020GL088679. doi:10.1029/2020GL088679</p> <p>[8] Huang, X., Swain, D. L., and Hall, A. D., 2020. Future precipitation increase from very high resolution ensemble downscaling of extreme atmospheric river storms in California, <i>Science Advances</i>, 6(29). doi:10.1126/sciadv.aba1323</p> <p>[7] Huang, X., Swain, D.L., Walton, D.B., Stevenson, S. and Hall, A.D., 2020. Simulating and Evaluating Atmospheric River-Induced Precipitation Extremes Along the US Pacific Coast: Case Studies From 1980-2017. <i>Journal of Geophysical Research: Atmospheres</i>, 125(4). doi: 10.1029/2019JD031554</p> <p>[6] Huang, X., Hall, A.D. and Berg, N., 2018. Anthropogenic warming impacts on today’s Sierra Nevada snowpack and flood risk. <i>Geophysical Research Letters</i>, 45(12), pp.6215-6222. doi: 10.1029/2018GL077432</p> <p>[5] Huang, X. and Ullrich, P.A., 2017. The changing character of twenty-first-century precipitation over the western United States in the variable-resolution CESM, <i>Journal of Climate</i>, 30(18), pp.7555-7575. doi: 10.1175/JCLI-D-16-0673.1</p> <p>[4] Huang, X. and Ullrich, P.A., 2016. Irrigation impacts on California’s climate with the variable-resolution CESM, <i>Journal of Advances in Modeling Earth Systems</i>, 8(3), pp.1151-1163. doi: 10.1002/2016MS000656</p> <p>[3] Huang, X., Rhoades, A.M., Ullrich, P.A. and Zarzycki, C.M., 2016. An evaluation of the variable-resolution CESM for modeling California’s climate, <i>Journal of Advances in Modeling Earth Systems</i>, 8(1), pp.345-369. doi: 10.1002/2015MS000559</p> <p>[2] Rhoades, A.M., Huang, X., Ullrich, P.A., and Zarzycki, C.M., 2016. Characterizing Sierra Nevada snowpack using variable-resolution CESM, <i>Journal of Applied Meteorology and Climatology</i>, 55(1), pp.173-196. doi: 10.1175/JAMC-D-15-0156.1</p> <p>[1] Huang, X., Jiao, Z., Dong, Y., Zhang, H. and Li, X., 2013. Analysis of BRDF and albedo retrieved by kernel-driven models using field measurements, <i>IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing</i>, 6(1), pp.149-161. doi: 10.1109/JSTARS.2012.2208264</p>
OTHER PUBLICATIONS	<p>Reich, K.D., Berg, N., Walton, D.B., Schwartz, M., Sun, F., Huang, X. and Hall, A., 2018. Climate change in the Sierra Nevada: California’s water future. <i>UCLA Center for Climate Science</i>.</p>

Huang, X., Jiao, Z., Dong, Y., Li, X. and Zhang, H., BRDF modeling comparison in hotspot effect with modified kernel-driven models. *Geoscience and Remote Sensing Symposium (IGARSS)*, 2012. *IEEE International*. 22-27 July Page(s): 4248-4251.

SOFTWARE **Huang, X.**, software copyright “V_AMBRALS” V1.0, 2012SR052708

TEACHING Guest Lecturer, Intro to Climate Modeling, UC Santa Barbara, Fall 2020

EXPERIENCES Teaching Assistant, Vegetation Remote Sensing, Beijing Normal Univ., Spring 2011

Lab Assistant, GIS Platform Programming course using C++, Wuhan University, Spring 2009

SELECTED ORAL **Huang, X.**, Climate modeling for extreme storm events over California, *GS3 Simulation Series for the Summer*, UC Santa Barbara, 2020.

Huang, X., Exploration of solving downscaling problem using deep learning-based image super-resolution techniques, *AGU Fall Meeting*, San Francisco, CA, 2019.

Huang, X. (invited). How Warming Impacts Precipitation Extremes, Snowpack and Flood risks over California with High-resolution Modeling, *PNNL*, Pasco, Washington, June, 2019.

Hall, A.D., Goldenson, N.L., **Huang, X.**, and Thackeray, C.W., Can GCMs produce credible projections of changes in extreme precipitation? (**invited lecture**). *AGU Fall Meeting*, San Francisco, CA, 2019.

Huang, X. (invited). Regional climate modeling and applications over the western United States. *Seminar talk, Department of Physics, University of Toronto*, Toronto, Canada, November, 2018.

Huang, X. (invited). Characterizing the Changes of the Top Atmospheric River Events over California in the Future. *Lightning talk at the Earth and Environmental System Modeling PI Meeting*, Potomac, Maryland, November, 2018.

Huang, X., Hall, A.D., and Berg N. Anthropogenic Warming Impacts on Today’s Sierra Nevada Snowpack and Flood Severity. *AGU Fall Meeting*, New Orleans, Louisiana, 2017.

Huang, X., (invited). Studying Regional Climate with Variable-Resolution CESM. *Seminar talk, Lawrence Berkeley National Laboratory*, Berkeley, CA, August 2017.

Huang, X., and Ullrich, P.A. Future changes of precipitation over the western United States using variable-resolution CESM. *21st Annual CESM Workshop*, Breckenridge, Colorado. June, 2016.

SELECTED **Huang, X.**, and Stevenson, S. Future changes to north Pacific mean-state and the connections to the western US precipitation extremes from multiple GCM large-ensembles. POSTER *AGU Fall Meeting*, Virtually, 2020.

Huang, X., Hall, A.D., and Swain, D.L. Future Warming Impacts on Orographic Precipitation Extremes over Sierra Nevada: Linking Large-scale Forcing from CESM-LENS to Fine-scale Climate Features. *CESM Large Ensembles Workshop*, Boulder, Colorado. July, 2019.

Huang, X., Walton, D.B., Swain, D.L., and Hall, A.D. The Modeling and Evaluation of the Extreme Historical Atmospheric Rivers Over the U.S. West Coast. 2018 International Atmospheric Rivers Conference, *Scripps Institution of Oceanography*, San Diego, California. June, 2018.

Huang, X., and Ullrich, P.A. The changing character of twenty-first-century precipitation over the western United States in the variable-resolution CESM. *AGU Fall Meeting*, San Francisco, California, 2016.

Huang, X., and Ullrich, P.A. Irrigation impacts on California's climate with the variable-resolution CESM. *21st Annual CESM Workshop*, Breckenridge, Colorado. June, 2016.

SELECTED WORKSHOPS

CESM Tutorial, NCAR, Boulder, Colorado, Aug. 2015 (**Travel support granted**)
1st WCRP Summer School on Climate Model Development: Atmospheric Moist Processes, MPI, Hamburg, Germany, June, 2015 (**Travel support granted**)

MEDIA AND OUTREACH

Coverage in multiple news outlets including the Weather Channel, Phys.org, Climate Signals, New York Times, UCLA Newsroom, etc.

PROFESSIONAL SERVICES

Journal referee: Science Advances, Water Resources Research, Journal of Climate, Climate Dynamics, Journal of Hydrometeorology, JGR-Atmos.

Proposal review panelist: NASA's ROSES solicitation.

Conference session organizer: Co-convening and co-chairing sessions (Bridging the Gap from Climate to Extreme Weather), AGU Fall Meeting, San Francisco, CA, 2019.

Online Climate Research Radio: Climate Research Radio. ([Link](#)).

PROFESSIONAL SKILLS

Earth System Modeling: WRF, CESM, E3SM, Noah-MP LSM

Programming/Software: C/C++, R, Python, Matlab, NCAR Command Language (NCL), L^AT_EX, JavaScript, OpenGL, Unix/Linux, ArcGIS, ENVI, PyTorch

Language: English, Mandarin (Native)

SOCIETIES AND AFFILIATIONS

American Geophysical Union, American Meteorological Society
Earth Science Women's Network, Women in GeoSpatial+