

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	Global and regional climate modeling, Climate change, Extremes and impacts Climate variability, Atmospheric dynamics, Numerical modeling, Machine learning Image processing and analysis, Remote sensing of environment, Geospatial statistics	
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
	Graduate Research Fellow, UC Davis & Berkeley Lab. Dept. of Land, Air and Water Res.; Climate and Ecosystem Sci.	2013 - 2016
EDUCATION BACKGROUND	Ph.D., Atmospheric Science, University of California, Davis Committee: Paul Ullrich (Chair, Advisor), Terry Nathan, Richard Grotjahn Travis O'Brien, & Daniel Feldman Minor in M.S. of Statistics with coursework completed 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 researches focused on AMBRALS models	2013
	B.S., Geographical Information System, Wuhan University Graduated with honors (Top one of the program) Thesis: The research of development and application for 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)	

Pending, DOE DE-FOA.0002230: Improving understanding of post-fire vegetation dynamics and risk of wildfire reoccurrence. \$880,302. **(Co-I)**

Pending, USGS/DRI, **Seed funding** for ArkStorm 2.0 project, \$25,000 (PI), fall-winter, 2020.

Main participant, Mechanisms of Pacific decadal variability in ESMs: the roles of stochastic forcing, feedbacks & external forcing, DOE BER, DE-SC0019418

PUBLICATIONS [11] **Huang, X.**, and Stevenson, S., 2020. The impact of future North Pacific mean-state changes on western US precipitation extremes: insights from multiple GCM large-ensembles. To submit.

[10] **Huang, X.**, 2020. Deep-learning based climate downscaling using the super-resolution method: a case study over western US, *Geoscientific Model Development*, In review. <https://doi.org/10.5194/gmd-2020-214>

PUBLISHED [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. *Geophysical Research Letters*, 47, e2020GL088679. doi:10.1029/2020GL088679

[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, *Science Advances*, 6(29). doi:10.1126/sciadv.aba1323

[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. *Journal of Geophysical Research: Atmospheres*, 125(4). doi: 10.1029/2019JD031554

[6] **Huang, X.**, Hall, A.D. and Berg, N., 2018. Anthropogenic warming impacts on today’s Sierra Nevada snowpack and flood risk. *Geophysical Research Letters*, 45(12), pp.6215-6222. doi: 10.1029/2018GL077432

[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, *Journal of Climate*, 30(18), pp.7555-7575. doi: 10.1175/JCLI-D-16-0673.1

[4] **Huang, X.** and Ullrich, P.A., 2016. Irrigation impacts on California’s climate with the variable-resolution CESM, *Journal of Advances in Modeling Earth Systems*, 8(3), pp.1151-1163. doi: 10.1002/2016MS000656

[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, *Journal of Advances in Modeling Earth Systems*, 8(1), pp.345-369. doi: 10.1002/2015MS000559

[2] Rhoades, A.M., **Huang, X.**, Ullrich, P.A., and Zarzycki, C.M., 2016. Characterizing Sierra Nevada snowpack using variable-resolution CESM, *Journal of Applied Meteorology and Climatology*, 55(1), pp.173-196. doi: 10.1175/JAMC-D-15-0156.1

[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, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 6(1), pp.149-161. doi: 10.1109/JSTARS.2012.2208264

OTHER
PUBLICATIONS

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. *UCLA Center for Climate Science*.

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, registration ID: 2012SR052708

TEACHING
EXPERIENCES

Teaching Assistant, Vegetation Remote Sensing, Beijing Normal University, Spring 2011

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

SELECTED ORAL
PRESENTATIONS

Huang, X., Climate modeling for extreme storm events over California, *GS³ Simulation Series for the Summer of 2020*, UCSB.

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.

	<p>Huang, X., and Ullrich, P.A. Future changes of precipitation over the western United States using variable-resolution CESM. <i>21st Annual CESM Workshop</i>, Breckenridge, Colorado. June, 2016.</p>
SELECTED POSTER PRESENTATIONS	<p>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. <i>CESM Large Ensembles Workshop</i>, Boulder, Colorado. July, 2019.</p> <p>Swain, D., Huang, X., and Langenbrunner, B. Dynamics of and Precursors to California Megafloods, Present and Future. <i>99th AMS Annual Meeting</i>, Phoenix, Arizona. Jan., 2019.</p> <p>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, <i>Scripps Institution of Oceanography</i>, San Diego, California. June, 2018.</p> <p>Huang, X., and Ullrich, P.A. The changing character of twenty-first-century precipitation over the western United States in the variable-resolution CESM. <i>AGU Fall Meeting</i>, San Francisco, California, 2016</p> <p>Huang, X., and Ullrich, P.A. Irrigation impacts on California’s climate with the variable-resolution CESM. <i>21st Annual CESM Workshop</i>, Breckenridge, Colorado. June, 2016</p>
SELECTED WORKSHOPS	<p>CESM Tutorial, NCAR, Boulder, Colorado, Aug. 2015 (Travel support granted)</p> <p>1st WCRP Summer School on Climate Model Development: Atmospheric Moist Processes, MPI, Hamburg, Germany, June, 2015 (Travel support granted)</p>
MEDIA AND OUTREACH	<p>Coverage in multiple news outlets including the Weather Channel, Phys.org, Climate Signals, New York Times, and UCLA Newsroom, etc; Congress briefing event.</p>
PROFESSIONAL SERVICES	<p>Journal referee: Journal of Climate, Climate Dynamics, Journal of Hydrometeorology, JGR-Atmospheres, Water Resources Research, and NPJ climate and atmospheric science.</p> <p>Conference session organizer: Co-convening and co-chairing sessions (Bridging the Gap from Climate to Extreme Weather), AGU Fall Meeting, San Francisco, CA, 2019.</p>
PROFESSIONAL SKILLS	<p>Earth System Modeling: WRF, CESM, and E3SM models; Noah-MP LSM</p> <p>Programming/Software: C/C++, NCL, R, Python, Matlab, L^AT_EX, JavaScript, OpenGL, Unix/Linux, ArcGIS, ENVI, PyTorch</p>
SOCIETIES AND AFFILIATIONS	<p>American Geophysical Union, American Meteorological Society</p> <p>Earth Science Women’s Network</p>
LANGUAGES	<p>Mandarin (native), English (fluent)</p>