

ALEX HALL

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BACKGROUND

Dr. Hall's research is focused on reducing climate change uncertainty at both regional and global scales. At the global scale, his goal is to reduce uncertainty surrounding processes determining the climate system's response to increases in greenhouse gases. At the regional scale, he has been active in the development of downscaling techniques to reduce uncertainty about processes that are crucial to regional climate change, but are unrepresented in global climate models. At UCLA, Dr. Hall teaches climate-related courses at the undergraduate and graduate levels. He is a recipient of the NSF Graduate Fellowship (1993–1996), the NASA Earth System Science Fellowship (1996–1998), the Lamont Fellowship (1999–2001), and the NSF CAREER award (2002–2007).

SYNERGISTIC ACTIVITIES

Dr. Hall was a Contributing Author to the 2007 IPCC 4th scientific assessment of climate change Working Group I report, where his work on climate sensitivity is featured. He was also a Lead Author for Chapter 14 of the Working Group I component of the IPCC 5th Assessment Report, entitled “Climate Phenomena and their Relevance for Future Regional Climate Change,” and a Contributing Author of Chapter 9, “Evaluation of Climate Models.” He was co-chair of US CLIVAR Climate Prediction and Applications Interface Panel, charged with making research and funding recommendations to US agencies regarding climate prediction and climate applications and was also a member of the overarching US CLIVAR committee (2002–2009). He is a member of the executive committee of the UCLA–JPL Joint Institute for Regional Earth System Science and Engineering, and the faculty director of the UCLA Center for Climate Change Solutions and the UCLA Earth Systems Institute. Finally, he is a member of the technical advisory board for the Los Angeles Collaborative for Climate Action and Sustainability, a consortium of local governments, NGOs and businesses, and is the lead scientist for the Collaborative's “Climate Change in the Los Angeles Region Project.” In 2014, Dr. Hall was named an Environmentalist of the Year by the nonprofit organization Faith2Green and Los Angeles City Councilman Paul Koretz.

PROFESSIONAL PREPARATION

Pomona College, Claremont, CA

B.A., 1993, *summa cum laude*, double concentration in Physics and History

Princeton University, Princeton, NJ

Ph.D., Atmospheric and Oceanic Sciences, 1998. Thesis advisor: Suki Manabe

Lamont-Doherty Earth Observatory, Lamont postdoctoral fellow. October 1998–November 2000.

APPOINTMENTS

University of California—Los Angeles, Professor, *Department of Atmospheric and Oceanic Sciences*, July 2012–present. Professor, *Institute of the Environment and Sustainability*, 2012–present. Associate Professor, June 2008–June 2012 (AOS), 2009–2012 (IoES). Assistant Professor (AOS), November 2000–June 2008.

Graduate and Postdoctoral Advisors

Graduate Advisor: Suki Manabe, currently Professor Emeritus of Princeton University. No fixed postdoctoral advisor.

Thesis Advisor and Postgraduate-Scholar Sponsor

Currently advising Alex Jousse and Marla Schwartz, graduate students in the UCLA Atmospheric and Oceanic Sciences Department. Advised Dr. Xin Qu (Ph.D., 2007), Dr. Mimi Hughes (Ph.D. 2008), Dr. Sarah Kapnick, (Ph.D. 2011), Dr. Daniel Walton (Ph.D. 2015), Dr. Neil Berg (Ph.D. 2015), Dr. Alex Jousse (Ph.D., 2016) as well as 3 other students. Total students advised: 10. Postdoctoral-Scholar sponsor for Drs. Xin Qu, Julien Boé, Fengpeng Sun, Tamlin Pavelesky, Hsin-Yuan Huang, Scott Capps, Florent Brient, Anthony DeAngelis, Daniel Walton, and Neil Berg.

REFEREED PUBLICATIONS

- Walton DB, A Hall, N Berg, M Schwartz, and F Sun, 2016: Incorporating snow albedo feedback into downscaled temperature and snow cover projections for California's Sierra Nevada. *Journal of Climate*, in press. DOI: 10.1175/JCLI-D-16-0168.1
- Renault L, MJ Molemaker, JC McWilliams, AF Shchepetkin, Florian Lemarié, D Chelton, S Illig, and A Hall, 2016: Modulation of Wind-Work by Ocean Current Interaction with the Atmosphere. *Journal of Physical Oceanography*, 46(6), 1685–1704. DOI: 10.1175/JPO-D-15-0232.1
- Sun F, A Hall, M Schwartz, D Walton, and N Berg, 2016: 21st-century snowfall and snowpack changes in the Southern California mountains. *Journal of Climate*, 29(1): 91–110. DOI: 10.1175/JCLI-D-15-0199.1
- Jousse A, A Hall, F Sun, and J Teixeira, 2016: Causes of energy fluxes biases in a stratocumulus region. *Climate Dynamics*, 46(1), 571–584. DOI: 10.1007/s00382-015-2599-9
- Huang, H-Y, and A Hall, 2016: A physically-based hybrid framework to estimate daily-mean surface fluxes over complex terrain. *Climate Dynamics*, 46(11): 3883–3897. DOI: 10.1007/s00382-015-2810-z
- Brient, F, T Schneider, Z Tan, S Bony, X Qu, and A Hall, 2016: Shallowness of tropical low clouds as a predictor of climate models' response to warming. *Climate Dynamics*, 47(1), 433–449. DOI: 10.1007/s00382-015-2846-0
- Klein SA, and A Hall, 2015: Emergent constraints for cloud feedbacks. *Current Climate Change Reports*, 1(4), 276–287. DOI: 10.1007/s40641-015-0027-1.
- DeAngelis A, X Qu, MD Zelinka, and A Hall, 2015: An observational radiative constraint on hydrologic cycle intensification. *Nature*, 528, 249–253. DOI: 10.1038/nature15770.
- Schwartz M, A Hall, and F Sun, 2015: Mean surface runoff insensitive to warming in a key Mediterranean-type climate: a case study of the Los Angeles region. *Journal of Climate*, in review.
- Qu X, A Hall, SA Klein, and A DeAngelis, 2015: Positive tropical marine low-cloud cover feedback inferred from cloud-controlling factors. *Geophysical Research Letters*, 42(1), 7767–7775. DOI: 10.1002/2015GL065627
- Jin Y, ML Goulden, N Faivre, S Veraverbeke, F Sun, A Hall, MS Hand, S Hook, and JT Randerson, 2015: Identification of two distinct fire regimes in Southern California: Implications for economic impact and future change. *Environmental Research Letters, Environmental Research Letters*, 10, 094005. DOI: 10.1088/1748-9326/10/9/094005

- Xie, S-P, C Deser, G Vecchi, M Collins, T Delworth, A Hall, E Hawkins, N Johnson, C Cassou, A Giannini, and M Watanabe, 2015: Towards predictive understanding of regional climate change: Issues and opportunities for progress. *Nature Climate Change*, 5, 921–930. DOI: 10.1038/nclimate2689
- Berg N and A Hall, 2015: Increased interannual precipitation extremes over California under climate change. *Journal of Climate*, 28(16), 6324–6334. DOI: 10.1175/JCLI-D-14-00624.1
- Renault L, A Hall, and JC McWilliams, 2015: Orographic shaping of US west coast wind profiles during the upwelling season. *Climate Dynamics*, 46(1), 273–289. DOI: 10.1007/s00382-015-2583-4
- Sun F, D Walton, and A Hall, 2015: A hybrid dynamical–statistical downscaling technique, part II: End-of-century warming projections predict a new climate state in the Los Angeles region. *Journal of Climate*, 28(12): 4618–4636. DOI: 10.1175/JCLI-D-14-00197.1
- Walton D, F Sun, A Hall, and SC Capps, 2015: A hybrid dynamical–statistical downscaling technique, part I: Development and validation of the technique. *Journal of Climate*, 28(12): 4597–4617. DOI: 10.1175/JCLI-D-14-00196.1
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- Qu X, A Hall, SA Klein, and PM Caldwell, 2015: The strength of the tropical inversion and its response to climate change in 18 CMIP5 models. *Climate Dynamics*, 45(1–2), 375–396. DOI: 10.1007/s00382-014-2441-9
- Hall A, 2014: Projecting regional change. *Science*, 346 (6216): 1461–1462. DOI: 10.1126/science.aaa0629
- Jin Y, JT Randerson, N Faivre, SC Capps, A Hall, and ML Goulden, 2014: Contrasting controls on wildland fires in Southern California during periods with and without Santa Ana winds. *Journal of Geophysical Research—Biogeosciences*, 119(3), 432–450. DOI: 10.1002/2013JG002541
- Qu X, A Hall, SA Klein, and PM Caldwell, 2014: On the spread of changes in marine low cloud cover in climate model simulations of the 21st century. *Climate Dynamics*, 42(9–10), 2602–2606. DOI: 10.1007/s00382-013-1945-z
- Qu X and A Hall, 2014: On the persistent spread in snow-albedo feedback. *Climate Dynamics*, 42(1–2), 69–81. DOI: 10.1007/s00382-013-1945-z
- Capps SB, A Hall, and M Hughes, 2014: Sensitivity of Southern California wind energy to turbine characteristics. *Wind Energy*, 17(1), 141–159. DOI: 10.1002/we.1570
- Christensen JH, et al., 2013: Climate phenomena and their relevance for future regional climate change. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P. M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

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