

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, and recently launched a new major in Climate Science. He is a recipient of the American Geophysical Union Atmospheric Sciences Ascent Award (2016), the NSF CAREER award (2002–2007), the Lamont Fellowship (1999–2001), the NASA Earth System Science Fellowship (1996–1998), and the NSF Graduate Fellowship (1993–1996).

SYNERGISTIC ACTIVITIES

Dr. Hall was a Contributing Author to the 2007 IPCC 4th scientific assessment of climate change Working Group I report, Lead Author for Chapter 14 of the Working Group I component of the IPCC 5th Assessment Report (“Climate Phenomena and their Relevance for Future Regional Climate Change”), and a Contributing Author of Chapter 9 of the IPCC 5th Assessment Report (“Evaluation of Climate Models”). Dr. Hall was also selected by the State of California to be Coordinating Lead Author of the Los Angeles regional chapter of the State's Fourth Climate Change Assessment. At UCLA, he is the faculty director of the UCLA Center for Climate Science, and is a member of the steering committee of UCLA's Sustainable Los Angeles Grand Challenge.

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

Advised Dr. Xin Qu (Ph.D., 2007), Dr. Mimi Hughes (Ph.D. 2008), and Dr. Sarah Kapnick, (Ph.D. 2011), Dr. Daniel Walton (Ph.D. 2015), Dr. Neil Berg (Ph.D. 2015), Dr. Alex Jousse (Ph.D. 2015), and Dr. Marla Schwartz (Ph.D. 2016), as well as 3 other students. Postdoctoral-Scholar sponsor for Drs. Xin Qu, Julien Boé, Fengpeng Sun, Tamlin Pavelsky, Hsin-Yuan Huang, Scott Capps, Florent Brient, Anthony DeAngelis, Daniel Swain, Xingying Huang, and Chad Thackeray.

REFEREED PUBLICATIONS

- Sun F, A Hall, M Schwartz, N Berg, and DB Walton, 2018: Almost inevitable end-of-century loss of spring snowpack over California's Sierra Nevada. *Geophysical Research Letters*, in press.
- Thackeray CW, AM DeAngelis, A Hall, DL Swain, and X Qu, 2018: On the connection between global hydrologic sensitivity and regional wet extremes. *Geophysical Research Letters*. DOI: 10.1029/2018GL079698
- Thackeray CW, X Qu, and A Hall, 2018: Why do models produce spread in snow albedo feedback? *Geophysical Research Letters*, 45(12): 6223–6231. DOI: 10.1029/2018GL078493
- Huang X, A Hall, and N Berg, 2018: Anthropogenic warming impacts on today's Sierra Nevada snowpack and flood risk. *Geophysical Research Letters*, 45(12): 6215–6222. DOI: 10.1029/2018GL077432
- Swain DL, B Langenbrunner, JD Neelin, and A Hall, 2018: Increasing precipitation volatility in twenty-first-century California. *Nature Climate Change*, 7: 427–433. DOI: 10.1038/s41558-018-0140-y
- Qu, X, A Hall, AM DeAngelis, MD Zelinka, SA Klein, H Su, B Tian, and C Zhai, 2018: On the emergent constraints of climate sensitivity. *Journal of Climate*, 31(2): 863–875. DOI: 10.1175/JCLI-D-17-0482.1
- Maraun D, TG Shepherd, M Widmann, G Zappa, DB Walton, JM Gutiérrez, S Hagemann, I Richter, PMM Soares, A Hall, and LO Mearns, 2017: Toward process-informed bias correction of climate change simulations. *Nature Climate Change*, 7: 764–773. DOI: 10.1038/nclimate3418
- Klein SA, A Hall, JR Norris, and R Pincus, 2017: Low-cloud feedbacks from cloud-controlling factors: a review. *Surveys in Geophysics*, 38(6): 1307–1329. DOI: 10.1007/s10712-017-9433-3
- Schwartz M, A Hall, F Sun, DB Walton, and N Berg, 2017: Significant and inevitable end-of-21st-century advances in surface runoff timing in California's Sierra Nevada. *Journal of Hydrometeorology*, 18(12): 3181–3197. DOI: 10.1175/JHM-D-16-0257.1
- Walton, DB, and A Hall, 2017: An assessment of high-resolution gridded temperature datasets. *Journal of Climate*, 31(10), 3789–3810. DOI: 10.1175/JCLI-D-17-0410.1
- Berg N and A Hall, 2017: Anthropogenic warming impacts on California snowpack during drought. *Geophysical Research Letters*, 44(5), 2511–2518. DOI: 10.1002/2016GL072104
- Walton DB, A Hall, N Berg, M Schwartz, and F Sun, 2017: Incorporating snow albedo feedback into downscaled temperature and snow cover projections for California's Sierra Nevada. *Journal of Climate*, 30(4): 1417–1438. DOI: 10.1175/JCLI-D-16-0168.1
- DeAngelis A, X Qu, and A Hall, 2016: Importance of vegetation processes for model spread in the fast precipitation response to CO₂ forcing. *Geophysical Research Letters*, 43, 12550–12559. DOI: 10.1002/2016GL071392
- Vahmani P, F Sun, A Hall, and G Ban-Weiss, 2016: Investigating the climate impacts of urbanization and the potential for cool roofs to counter future climate change in Southern California. *Environmental Research Letters*, 11(12): 124027. DOI: 10.1088/1748-9326/11/12/124027

- 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
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- 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.
- 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*, 10, 094005. DOI: 10.1088/1748-9326/10/9/094005
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- 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
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- Hughes M, A Hall, and RG Fovell, 2007: Dynamical controls on the diurnal cycle of temperature in complex topography. *Climate Dynamics*, 29, 277–292. DOI: 10.1007/s00382-007-0239-8
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