Spencer A. Hill

Publications

Submitted/under review/in revision

1. Mitchell, Jonathan L. and **Spencer A. Hill**. "Constraints from invariant subtropical vertical velocities on the scalings of Hadley cell strength and downdraft width with rotation rate." Submitted to *Journal of the Atmospheric Sciences*.

Peer-reviewed

1. (2020) **Hill, Spencer A.**, Simona Bordoni, and Jonathan L. Mitchell. "Axisymmetric Hadley Cell theory with a fixed tropopause temperature rather than height." *Journal of the Atmospheric Sciences*, **77**, 1279-1294. doi: 10.1175/JAS-D-19-0169.1.

2. (2019) **Hill, Spencer A.** "Theories for past and future monsoon rainfall changes." *Current Climate Change Reports*, **5**, 160-171. doi: 10.1007%2Fs40641-019-00137-8. Online access: `https://rdcu.be/bHFCZ`.

3. (2019) **Hill, Spencer A.**, Simona Bordoni, and Jonathan L. Mitchell. "Axisymmetric constraints on cross-equatorial Hadley cell extent." *Journal of the Atmospheric Sciences*, **76**, 1547-1564. doi: 10.1175/JAS-D-18-0306.1.

4. (2018) **Hill, Spencer A.**, Juan M. Lora, Norris Khoo, Sean P. Faulk, and Jonathan M. Aurnou. "Affordable rotating fluid demonstrations for geoscience education: The *DIYnamics* project." *Bulletin of the American Meteorological Society*, **99**, 2529-2538. doi: 10.1175/BAMS-D-17-0215.1.

5. (2018) **Hill, Spencer A.**, Yi Ming, and Ming Zhao. "Robust responses of the Sahelian hydrological cycle to global warming." *Journal of Climate*, **31**, 9793-9814. doi: 10.1175/JCLI-D-18-0238.1.

6. (2018) Smyth, Jane, **Spencer A. Hill**, and Yi Ming. "Simulated responses of the West African monsoon and zonal-mean tropical precipitation to early Holocene orbital forcing." *Geophysical Research Letters*, **45**, 12,049-12,057. doi: 10.1029/2018GL080494.

7. (2017) **Hill, Spencer A.**, Yi Ming, Isaac M. Held, and Ming Zhao. "A moist static energy budget-based analysis of the Sahel rainfall response to uniform oceanic warming." *Journal of Climate*, **30**, 5637-5660. doi: 10.1175/JCLI-D-16-0785.1.

8. (2017) Brown, Patrick T., Yi Ming, Wenhong Li, and **Spencer A. Hill**. "Change in the magnitude and mechanisms of unforced low-frequency surface temperature variability in a warmer climate." *Nature Climate Change*, **7**, 743-748. doi: 10.1038/nclimate3381.

9. (2017) Jeevanjee, Nadir, Pedram Hassanzadeh, **Spencer A. Hill**, and Aditi Sheshadri. "A perspective on climate model hierarchies." *Journal of Advances in Modeling Earth Systems*, **9**, 1760-1771. doi: 10.1002/2017MS001038.

10. (2015) **Hill, Spencer A.**, Yi Ming, and Isaac M. Held. "Mechanisms of forced tropical meridional energy flux change." *Journal of Climate*, **28**, 1725-1742. doi: 10.1175/JCLI-D-14-00165.1.

    - Corrigendum: `https://dx.doi.org/10.1175/JCLI-D-16-0485.1`.

11. (2012) **Hill, Spencer A.** and Yi Ming. "Nonlinear climate response to regional brightening of tropical marine stratocumulus." *Geophysical Research Letters*, **39**, L15707, 5 pp. doi: 10.1029/2012GL052064.

PhD thesis

(2016) **Hill, Spencer A.** "Energetic and hydrological responses of Hadley circulations and the African Sahel to sea surface temperature perturbations." PhD Thesis, Princeton University Program in Atmospheric and Oceanic Sciences.

Non peer-reviewed

1. Numerous blog posts for the DIYnamics blog. Available at `https://diynamics.github.io/blog/author/spencer-hill.html`.

2. (2017) **Hill, Spencer A.** and Spencer K. Clark. "What's needed for the Future of AOS Python? Tools for Automating AOS Data Analysis and Management." Invited guest blog post on "PyAOS" blog. URL: `http://pyaos.johnny-lin.com/?p=1546`.

3. (2012) **Hill, Spencer A.** "A head in the clouds elucidates climate" (book review of *Atmosphere, Clouds, and Climate* by David Randall). *Science*, **337**, 1 pp., doi: 10.1126/science.1225615.

Software

1. (2018) **Hill, Spencer A.** and Spencer Clark. "`aospy`: automated climate data analysis and management." Version 0.3.1. `https://aospy.readthedocs.io`. doi: 10.5281/zenodo.1490928.

2. (2016) Hoyer, Stephan et al. "xarray: v0.8.0." doi: 10.5281/zenodo.59499.