

Stanford



Brian Green

Postdoctoral Research Fellow, Earth System Science

 Curriculum Vitae available Online

Bio

BIO

I'm excited to join Aditi's group, where I'll be using a new dataset of balloon observations to study stratospheric gravity waves. The pressure, temperature, and wind data from the hundreds of balloons Loon has launched provide unprecedented spatial coverage and sampling of the stratosphere at frequencies ideal for studying gravity waves. Our goals are to better understand the sources of these waves and their effect on atmospheric dynamics and circulation, and to develop better parameterizations of them for use in climate models. Before arriving at Stanford, my research focused on the dynamics of tropical rainfall: the historical influence of extratropical sea surface temperatures on it, how its distribution is coupled to the tropical ocean circulation, and how the storms that produce it contribute to the vertical profile of time mean ascent in the tropics. This research involved simplified global climate models, reconstructions of the climate from observations, and satellite observations of tropical storms.

PROFESSIONAL EDUCATION

- Bachelor of Science, University of Michigan Ann Arbor (2007)
- Master of Engineering, Rensselaer Polytechnic Institute (2012)
- Doctor of Philosophy, Massachusetts Institute of Technology (2018)
- PhD, Massachusetts Institute of Technology, Climate Science (2018)

STANFORD ADVISORS

- Aditi Sheshadri, Postdoctoral Faculty Sponsor

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My current research is on the dynamics and circulation of the stratosphere, focusing on quantifying the sources and effects of gravity waves. More broadly, I'm interested in and curious about a large range of topics relating to tropical climate, clouds, and the general circulation of the atmosphere and ocean.

Publications

PUBLICATIONS

- **The "sticky" ITCZ: ocean-moderated ITCZ shifts** *CLIMATE DYNAMICS*
Green, B., Marshall, J., Campin, J.
2019; 53 (1-2): 1–19
- **Modulation of Monsoon Circulations by Cross-Equatorial Ocean Heat Transport** *JOURNAL OF CLIMATE*
Lutsko, N. J., Marshall, J., Green, B.

2019; 32 (12): 3471–85

- **Hemispherically asymmetric trade wind changes as signatures of past ITCZ shifts** *QUATERNARY SCIENCE REVIEWS*

Mcgee, D., Moreno-Chamarro, E., Green, B., Marshall, J., Galbraith, E., Bradtmiller, L.

2018; 180: 214–28

- **Twentieth century correlations between extratropical SST variability and ITCZ shifts** *GEOPHYSICAL RESEARCH LETTERS*

Green, B., Marshall, J., Donohoe, A.

2017; 44 (17): 9039–47

- **Coupling of Trade Winds with Ocean Circulation Damps ITCZ Shifts** *JOURNAL OF CLIMATE*

Green, B., Marshall, J.

2017; 30 (12): 4395–4411