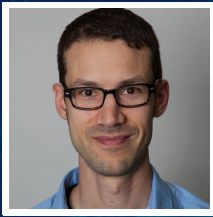


Physics of Monsoons



William Boos

Associate Professor, Geology and Geophysics

CURRENT RESEARCH

Using atmospheric fluid dynamics to understand monsoon changes

Monsoons are atmospheric circulations, or wind patterns, that deliver water to billions of people in Africa, Asia, Australia, and the tropical Americas. Relatively minor changes in the position and strength of these continental-scale circulations can have catastrophic effects – too much rainfall produces floods; too little causes drought and famine. In the past decade, almost every year we have seen a flood in Africa or Asia that has killed hundreds to thousands of people, and a long drought in Africa afflicted tens of millions of people in the 1970s and 1980s. Yet very fundamental aspects of the physics of monsoons remain poorly understood and poorly predicted. Dr. William Boos, Associate Professor of Geology and Geophysics at Yale University, studies the basic physics of monsoons to better understand past and future changes in these socially important atmospheric circulations. Improved understanding will lead to more accurate forecasts of tropical weather, clearer predictions of seasonal rainfall for agriculture, and increase knowledge of long-term trends in the climate of many developing tropical nations.

To understand the fundamental mechanisms of monsoons, Dr. Boos uses theoretical atmospheric fluid dynamics, observational analyses, and high performance computing. By numerically solving the equations of fluid motion on hundreds to thousands of computer processors at a time, he and his team create numerical experiments that provide deeper insight into the core physics of atmospheric flow patterns. Dr. Boos' highly international team consists of three graduate students from India, China, and the US, and two postdocs from Israel and France, all collaborating with researchers in the US and abroad to combine...

[Read More at benefunder.com/](http://benefunder.com/)

AFFILIATION



Yale University

EDUCATION

- Ph.D. in Department of Earth, Atmospheric & Planetary Sciences 2008, Massachusetts Institute of Technology

AWARDS

- Director's Award, 2014
- CAREER Award, 2013
- American Geophysical Union Citation, 2013
- Young Investigator Research Award, 2011
- James R. Holton Junior Scientist Award, 2010

RESEARCH AREAS

Environment, Atmospheric / Space, Natural Disasters / Emergency

FUNDING REQUEST

Your contributions will support Dr. William Boos and his team at Yale University as they improve understanding of the physics of planetary-scale circulations in Earth's tropical atmosphere. Donations will help fund the roughly \$400K/year required to support his team of five students and postdocs and their high performance computing hardware. Partner with Dr. Boos and his team as they study monsoons to improve predictions of tropical floods and drought in Africa, Asia and other continents!