NORTHEASTERN UNIVERSITY Distinguished Seminar Series Civil & Environmental Engineering

Intensification of precipitation extremes with warming – Theory, simulations, and observations

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Abstract

Precipitation extremes increase in intensity over many regions of the globe in simulations of a warming climate. The rate of increase in the extra tropics is consistent across climate models, but the rate of increase in the tropics varies widely depending on the model used. In this talk, I will first show how a simple scaling can be used to better understand the physical factors contributing to the changes in precipitation extremes. I will then describe ongoing work that seeks to better quantify the sensitivity of precipitation extremes to climate change using idealized cloud-system-resolving simulations and observed variability.



Paul A. O'Gorman is the Victor P. Starr Associate Professor of Atmospheric Science at MIT. His research interests are in the large-scale dynamics of the atmosphere and the role of water vapor in the climate system. He is particularly interested in the effect of climate change on atmospheric circulations and on the distribution of precipitation. He earned a BA in Theoretical Physics and an MSc in High-Performance Computing from Trinity College Dublin. He earned a PhD in Aeronautics with a minor in Applied Mathematics from Caltech.

Thursday, January 17, 2013 12:00 p.m. – 1:00 p.m. 135 Shillman Hall