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May 3rd, 3:45 PM - 5:00 PM

Compound Extreme Events

Radley Horton

Lamont-Doherty Earth Observatory, Columbia University

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MONTCLAIR STATE
UNIVERSITY

The Doctoral Program in Environmental Science & Management
and MSU Sustainability Seminar Series Present

Compound Extreme Events

WHEN: Monday, May 3, 3:45 pm WHERE: [Online via Zoom](#)

Radley Horton

Lamont-Doherty Earth Observatory, Columbia University



Radley Horton is a Research Professor at Columbia University's Lamont-Doherty Earth Observatory. His research focuses on climate extremes, tail risks, climate impacts, and adaptation. Radley was a Convening Lead Author for the Third National Climate Assessment, and served on the Sea Level Rise and Climate Scenarios Task Forces for the Fourth National Climate Assessment. He is the Lead Principal Investigator for the NOAA-Regional Integrated Sciences and Assessments-

funded Consortium for Climate Risk in the Urban Northeast. Radley also teaches in Columbia University's Sustainable Development department. Radley is a leading climate science communicator, appearing regularly on television, radio, and in print.

There is a growing realization among scientists and decision makers that extreme events should not be considered in isolation. Compound events of three types will be described: 1) multivariate (e.g. heat plus humidity), 2) sequential (e.g. a heat wave after a tropical cyclone), and 3) concurrent (e.g. simultaneous temperature extremes in multiple regions). Research results will be presented for these compound extremes.

More research is needed on correlations and physical mechanisms that can link seemingly independent extreme events. This research is especially urgent now, since climate change may shift the correlation structures of extreme events, and because compound extreme events can lead to outsized non-linear impacts, in part because of correlations that extend beyond climate variables into impacts and policy responses (e.g. simultaneous risk of heat waves, poor air quality, and power failures).

Stakeholder driven approaches to identifying key impacts, and ultimately adapting to them, will also be discussed.

For more information contact Dr. Mark Chopping at mark.chopping@montclair.edu