

School of Earth and Environmental Sciences Colloquium Series

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“Water limitation regulates positive feedback of increased ecosystem respiration”

Wed., Nov.15th 12:15-1:30PM

Science Bldg.

C-207

Zoom ID:

820 5441 6677

Passcode: 895367



Ecosystem respiration, a key player in the carbon cycle, can intensify global warming. We identify a threshold precipitation function that separates temperature-limited and water-limited respiration based on analysis of worldwide CO₂ flux observation. Respiration is temperature-limited above this threshold; otherwise, it becomes water-limited. Water availability regulates the temperature sensitivity of respiration and its positive feedback to global warming. As the global warming continues, expanding water-limited areas weaken this feedback. By incorporating the observed threshold precipitation function, we can reduce uncertainties in climate change projections.