



COLLOQUIUM

ENSEMBLE MODELING OF CLIMATE-CARBON CYCLE INTERACTIONS

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REFRESHMENTS AT 4:00PM

The interactions between Earth's carbon cycle and climate are key to understanding both past and future climate change. NOAA-GFDL developed two coupled climate-carbon cycle models - or Earth System Models (ESMs) - that are able to simulate these interactions. While the major achievement of these efforts is the ability to freely integrate the coupled carbon and climate system in a self-consistent and self-sustaining manner, this independence from historical climate observations obscures the direct comparison between modeled climate and carbon response. This seminar will provide an overview of climate-carbon cycle interactions and discuss changes to the global carbon budget and climate resulting from anthropogenic activity as part of experiments performed in advance of the Fifth Assessment report of the Intergovernmental Panel on Climate Change. In particular, we describe how we use multi-member ensembles of historical simulations performed with GFDL's ESMs to provide further context to the observed changes in atmospheric carbon dioxide to support detection and attribution of the anthropogenic component.

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