

CGD SEMINAR



DATE: Tuesday 28 January, 2020

TIME: 11 am – 12 pm

LOCATION: NCAR, 1850 Table Mesa Drive
Mesa Lab, Main Seminar Room

TITLE: The Atmospheric Signature of Southern
Ocean Carbon Fluxes

SPEAKER: Matthew Long, NCAR

ABSTRACT:

The Southern Ocean is a critical component of the global carbon cycle, but air-sea carbon dioxide fluxes in the region are poorly constrained by observations and models.

In this talk, I present a comprehensive analysis of regional atmospheric carbon dioxide observations from aircraft and surface monitoring stations; these data show a spatially coherent depletion of carbon dioxide in the lower atmosphere over the Southern Ocean during austral summer and a more homogeneous distribution in winter. I demonstrate that summertime carbon dioxide depletion in the lower atmosphere is directly attributable to Southern Ocean air-sea exchange. The observations suggest that the Southern Ocean is a strong carbon dioxide sink during summer and the magnitude of this sink has likely strengthened over the past 15 years. This analysis has important implications for quantifying and detecting changes in the Southern Ocean carbon sink.

Live webcast: <https://www.ucar.edu/live>

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