

CGD SEMINAR



DATE: Tuesday, 10 January 2017

TIME: 11 a.m.

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

TITLE: Why do modelled and observed
surface stress climatologies differ in
the trade-wind regions?

SPEAKER: Isla Simpson, NCAR/CGD

ABSTRACT:

Global climate models (GCMs) exhibit stronger easterly zonal surface wind stress in the Northern Hemisphere (NH) trade winds than observationally constrained reanalyses or other observational products. Here, we aim to understand why this difference exists. In the vertical integral, the surface wind stress should balance the terms in the zonal momentum equation that arise from both the resolved large scale flow and other components of the parameterized physics. This is indeed found to be the case in the free running CMIP5 models, but a substantial discrepancy in the vertically integrated momentum balance is present in the reanalysis datasets. This discrepancy in the reanalysis balances arises because of the key role that the analysis increments play in constraining the winds in this region. An assessment of the character of these analysis increments can, therefore, help to reveal deficiencies in the representation of parameterized processes within the models and point toward the root cause of the surface wind stress discrepancy between observations and models.

Live webcast: <http://www.fin.ucar.edu/it/mms/ml-live.htm>

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