

CGD Seminar Series

Magnitudes and spatial patterns of forced and unforced interdecadal temperature variability in CMIP6 models

ABSTRACT

Attribution and prediction of global and regional warming requires a better understanding of the magnitude and spatial characteristics of internal global mean surface air temperature (GMST) variability. We examine interdecadal GMST variability in Coupled Modeling Intercomparison Projects, Phases 3, 5, and 6 (CMIP3, CMIP5, and CMIP6) preindustrial control (piControl), last millennium, and historical simulations and in observational data. We find that several CMIP6 simulations show more GMST interdecadal variability than the previous generations of model simulations. Nonetheless, we find that 100-year trends in CMIP6 piControl simulations never exceed the maximum observed warming trend. Furthermore, interdecadal GMST variability in the unforced piControl simulations is associated with regional variability in the high latitudes and the east Pacific, whereas interdecadal GMST variability in instrumental data and in historical simulations with external forcing is more globally coherent and is associated with variability in tropical deep convective regions.

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Date: Tuesday 19 April 2022

Time: 11am – 12pm

For Zoom information, please contact Tracy Baker tbaker@ucar.edu

For live stream information, visit the

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CGD Seminar Webpage