

Interactive comment on “Tropical Pacific Climate Variability under Solar Geoengineering: Impacts on ENSO Extremes” by Abdul Malik et al.

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I analyzed ENSO in HadCM3 and HadCM3L during my PhD (in work that was never published) and found that the ENSO SST timeseries in HadCM3 were fairly similar to observations whereas the HadCM3L series looked nothing like the observed series. I was therefore surprised to see that this paper used HadCM3L and described the ENSO performance as good. Does HadCM3L actually have a good representation of ENSO? "HadCM3L is capable of reproducing present-day ENSO periodicity, teleconnection patterns, and amplitude (Collins et al., 2001)." The paper the authors cite, actually reports results for HadCM3 and not HadCM3L, i.e. a model with double the ocean resolution than the one they use here:

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<https://link.springer.com/article/10.1007%2Fs003820000094>

Has ENSO been analyzed in HadCM3L before? Has its performance been validated? Seeing a comparison between the simulated and observed ENSO timeseries would provide a basic test of ENSO performance (see here: <https://www.esrl.noaa.gov/psd/enso/dashboard.html>), though I'm sure there are other relevant tests that could gauge HadCM3L's simulation of ENSO.

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2018-1312>, 2019.

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