Supplementary Slides

For: What drives upper ocean temperature variability in coupled climate models and observations?

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Supp. Fig. S1. Regression of Heat content tendency and a, b) vertical diffusion and c,d) ocean heat flux convergence: to 426m. A, c) Mercator smoothing = full width 100 points == 10deg.cos(lat). b,d) True 10deg. Smoothing = full width 10deg. == 100/cos(lat) points, applied only to Equatorward of 60deg latitude.
Supp. Fig. S2. As Fig. 3 but now showing regression between ocean heat content tendency to 50m, and surface heat flux. a) for LR b) for HR.
Supp. Fig. S3. a) HR: Correlation of heat content tendency to 50m and surface heat flux. b) HR: Correlation between SST tendency and latent heat flux. Sign convention: positive heat flux is out of the ocean, to be consistent with Small et al. (2019). Note that the top panel is based on 8 years of data, and the bottom panel on 35 years, and is thus smoother. Also, the regression on Nino3.4 SST is removed in b) but not in a).
Supp. Fig. S4. Correlation between SSH and various heat flux components, as labelled, in HR. Note sign convention is positive heat flux warms ocean.
Supp. Fig. S5. Correlation between 400m heat content and surface heat flux, in HR based on monthly data. Note sign convention is positive heat flux warms ocean. Compare with Fig. 10b.
Supp. Fig. S6. Correlation between monthly anomalies of latent heat flux and SST tendency. a) from CESM-LR b) CESM-HR smoothed to 10deg., c) from J-OFURO3 smoothed to 10deg., d) c) from J-OFURO3 smoothed to 15deg. Note that J-OFURO smoothed data is not shown near the coast, while CESM-HR data near the coast is subject to land influence on smoothing and should be ignored. Sign convention is positive heat flux for out of ocean here.
Supp. Fig. S7. The correlation between SSH and 400m heat content, both smoothed to 10deg. Compare with Fig. 9 (unsmoothed data).