EGU2020-12928, updated on 31 Oct 2020
https://doi.org/10.5194/egusphere-egu2020-12928
EGU General Assembly 2020

Reconstructions of Global and Regional Temperature Change for the Last 5 Myr

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We use a global array of ~120 sea-surface temperature (SST) records based on Mg/Ca, alkenone, and faunal proxies to reconstruct global and regional temperature change over the last 5 Myr. All records are placed on the LR04 age model. Here we report the reconstructions and discuss their implications for characterizing global climate evolution (frequency, variance, transitions) over this interval and its relationship to changes in CO2, orbital forcing, and mean ocean temperature. Average global temperature has cooled by ~6.5oC since 5 Ma, with significant breakpoints tentatively identified at ~3.38 Ma, 1.34 Ma, and 0.88 Ma. We also invert the global reconstruction to reconstruct global sea level for the last 5 Myr.