



## **Quiescent climate models or noisy proxies: comparing observed and simulated Holocene temperature variability**

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Determining magnitudes of climate variability is important for attributing past and predicting future changes in climate. Multidecadal and longer temperature variability is poorly constrained, however, primarily because instrumental records are short and proxy records are noisy. Using a global compilation of Holocene marine temperature proxy records and correcting for non-climate variability, we derive an estimate for regional temperature variability between annual and millennial time-scales. Our estimate of temperature variability is consistent between different proxy types and with instrumental records. In comparison, general circulation model simulations have systematically less temperature variability than instrumental and proxy-based estimates. Discrepancies in variability are largest at low latitudes and increase with timescale, reaching two orders of magnitude for tropical variability at millennial timescales.

This poster will summarize our recent efforts to estimate Holocene temperature variability and to understand the sources of the discrepancy between simulated and proxy-based Holocene variability estimates.