

Interactive comment on “The Paleoclimate reanalysis project” by S. A. Browning and I. D. Goodwin

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Referee 2 presents two basic criticisms: firstly, that our approach is more primitive than the Annan and Hargreaves (2012) approach; and secondly that the climate indices presented would also correlate to the original Last Millennium Ensemble (LME) simulations.

The first comment is curious given that Annan and Hargreaves (2012) conducted a pseudoproxy-only experiment using a very simple model (LOVE-CLIM) and proxies representing only one climatic variable (temperature). There is also no evidence to suggest their particle filter based approach is more effective than our analogue selection approach.

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The second comment is equally strange: the LME derived indices representing large-scale climate drivers (Nino 3.4 SST, SAM and NAO) should be in general agreement with equivalent proxy based indices. This is because these modes of variability are likely to contain an externally forced component that should be simulated in a fully forced model simulation (especially if the ensemble mean is used). We are trying to improve on this by also capturing the unforced, stochastic variability that is described by paleoclimate records. A comparison between the LME and proxy data is presented in Section 3, Figure 2, and does not need to be replicated in Figure 4.

Compared to the well considered constructive comments of the other 3 referees, Referee 2's comments do not provide any insights that would improve the manuscript and certainly do not present any valid arguments to prevent publication.

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