Climate of the Past Discussions

Clim. Past Discuss., community comment CC1
https://doi.org/10.5194/cp-2021-30-CC1, 2021
© Author(s) 2021. This work is distributed under
the Creative Commons Attribution 4.0 License.

Comment on cp-2021-30: Lorenz et al & adding a caveat emptor for 1km downscaling

John Williams

Community comment on "CHELSA-TraCE21k – high-resolution (1□km) downscaled transient temperature and precipitation data since the Last Glacial Maximum" by Dirk Nikolaus Karger et al., Clim. Past Discuss., https://doi.org/10.5194/cp-2021-30-CC1, 2021

A minor suggestion: adding a citation for Lorenz et al. 2016, which was (I think) the first published downscaling of SynTrace data, though this was for North America only, not global: *Lorenz, D.J., Nieto-Lugilde, D., Blois, J.L., Fitzpatrick, M.C., Williams, J.W., 2016. Downscaled and debiased climate simulations for North America from 21,000 years ago to 2100AD. Scientific Data 3, 160048.*

A more general comment/concern is that downscaling to 1km at the LGM (and, really, any pre-instrumental time period) has always seemed to me to be an instance of false precision. Given a) the good but imperfect data-model correlations shown for the historical data, b) the known uncertainties and biases in paleoclimatic simulations, and c) the intent of using these downscaled climates for paleobiogeographic simulations, there is a real risk that these downscaled data products will be used uncritically by biogeographic modelers. The 1km downscaling is already done, of course, so if the ms. is published here I strongly suggest adding a 'caveat emptor' paragraph or two in the discussion (with corresponding sentences in Abstract and Conclusions).

That said, this is a technically impressive work and is a useful addition to the suite of downscaled SynTrace simulations now available.