

Clim. Past Discuss., referee comment RC1
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Comment on cp-2021-146

Anonymous Referee #1

Referee comment on "Technical Note: Past and future warming – direct comparison on multi-century timescales" by Darrell S. Kaufman and Nicholas P. McKay, Clim. Past Discuss., <https://doi.org/10.5194/cp-2021-146-RC1>, 2021

This technical note goes into the reasons why the IPCC headline statements on the comparison of today's warming compared to the past have changed between AR5 and AR6. This is a neat and welcome summary (though the essentials are in the AR6 report already). There is an opportunity to update this beyond AR6 which should be done, and there needs to be a little more clarity on 'committed' warming. But this is publishable with only minor edits.

minor comments.

line 32. No-one has been 'forced' to do anything.

line 50. "However, these recent changes are indicative of long-term changes that are now underway." This is an odd sentence. Changes are indicative of changes? Better to say that there are long-term changes afoot which are unlikely to be reversed anytime soon. Using even the most optimistic scenarios (say SSP1-2.6) we can then make informed estimates of what the centennial average changes will look like.

line 53. "The upcoming warming includes committed climate change". This is a bit misleading. There is of course committed climate change (as the authors mention, deep sea warming, sea level, ice sheets etc). However, there really isn't any committed warming in the global mean surface temperature with a zero-emissions assumption. Since this note relates to the GMSAT it's odd to talk about committed warming. Unless the authors are discussing constant concentration commitment? (But I don't think this is the case).

line 58. "The upcoming warming..." - this will be interpreted as meaning the GMSAT increase, and so the "also" is redundant.

line 70. Now that Osman et al (2021) is published, this should be cited here too.

Figure 1. Add Osman et al curve to panel B. Are the scenarios in Panel C the assessed projections? (this should be stated explicitly).