

Interactive comment on “LGM climate forcing and ocean dynamical feedback and their implications for estimating climate sensitivity” by Jiang Zhu and Christopher J. Poulsen

Anonymous Referee #1

Received and published: 13 August 2020

One point which I forgot in my review so far, but which might also get improved by more details:

The efficacy of GHG @ LGM was 0.9 here. I am wondering if the full impact of CH₄ on radiative forcing includes indirect effects of CH₄ on stratospheric H₂O and tropospheric O₃. They have been proposed in Hansen et al., (2005) and they led to an additional change of 40% in radiative forcing of CH₄ (Hansen et al., 2008).

Hansen, J., Sato, M., Ruedy, R., Nazarenko, L., Lacis, A., Schmidt, G.A., Russell, G., Aleinov, I., Bauer, M., Bauer, S., Bell, N., Cairns, B., Canuto, V., Chandler, M., Cheng, Y., Genio, A.D., Faluvegi, G., Fleming, E., Friend, A., Hall, T., Jackman, C., Kelley,

C1

M., Kiang, N., Koch, D., Lean, J., Lerner, J., Lo, K., Menon, S., Miller, R., Minnis, P., Novakov, T., Oinas, V., Perlwitz, J., Perlwitz, J., Rind, D., Romanou, A., Shindell, D., Stone, P., Sun, S., Tausnev, N., Thresher, D., Wielicki, B., Wong, T., Yao, M., Zhang, S., 2005. Efficacy of climate forcings. *Journal of Geophysical Research* 110, D18104. doi:10.1029/2005JD005776.

Hansen, J., Sato, M., Kharecha, P., Beerling, D., Berner, R., Masson-Delmotte, V., Pagani, M., Raymo, M., Royer, D.L., Zachos, J.C., 2008. Target atmospheric CO₂: where should humanity aim? *The Open Atmospheric Science Journal* 2, 217–231. doi:10.2174/1874282300802010217.

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2020-86>, 2020.

C2