

Interactive comment on “Differences in tropical high clouds among reanalyses: origins and radiative impacts” by Jonathon S. Wright et al.

Anonymous Referee #2

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Please find specific / technical comments in attached review PDF.

General remarks:

This is a substantial comparison of five widely used reanalyses that exhibit a range of cloud behaviours near the tropical tropopause. Geographical and vertical distributions of high top cloud fractions and cloud water contents are evaluated. There is, in addition, an exploration of cloud radiative impacts and their wider influence on the atmosphere, through changes to the vertical profile of radiative heating in the tropics. The authors also take some care to investigate possible reasons for differences identified between the reanalyses as declared in their aims for the paper. As such the comparison makes informative reading for anyone interested in the relative performance of these reanalyses and their potential for estimating temperature biases

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or validating cloud and radiation metrics in unconstrained model simulations.

Please also note the supplement to this comment:

<https://www.atmos-chem-phys-discuss.net/acp-2019-1187/acp-2019-1187-RC2-supplement.pdf>

Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2019-1187>, 2020.

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