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# Reply on CC2

Marta Abalos et al.

Author comment on "The Brewer–Dobson circulation in CMIP6" by Marta Abalos et al., Atmos. Chem. Phys. Discuss., https://doi.org/10.5194/acp-2021-206-AC2, 2021

We aknowledge Petr Sacha and Roland Eichinger for their comment, and respond below to the points raised.

*- POINT 1: L212: "Common features include [...] particularly strong trends in the subtropical-midlatitude lower stratosphere." Please note that the existence of these regions has been pointed out and studied in detail in Šácha et al. (2019, ACP). These trend patterns can serve as a visual proxy for structural changes in the lower stratosphere in the models.*

Thank you for pointing out this study, we will refer to it regarding the AoA trend structure.

*- POINT 2: Please clarify your methodology with respect to the usage of w*_bar (results around Figs. 7, 10 and 11). As reported in the supplement of Dietmüller et al. (2018) for CCMI simulations, there were inconsistencies in the type of w*_bar provided by the modelling groups, despite the log-pressure formula being solicited in the data request. In the DynVar data request by Gerber and Manzini (2016), the log-pressure formula is also solicited. If there are inconsistencies in the w*_bar formulae between CMIP6 simulations, this can result in differences in wstar climatology and trends as quantified in Eichinger and Sacha (2020). Hence, our findings can help to narrow down the w*_bar differences in Fig. 11. Generally, note that due to stratospheric cooling, the relation of log-pressure metres to geometric metres is not constant, which projects also to the magnitude of w*_bar trends.*

We ensured that the requirements made in Garber and Manzini (2016) were fulfilled in all the simulations we used.