

## ***Interactive comment on “The Climatology of Brewer-Dobson Circulation and the Contribution of Gravity Waves” by Kaoru Sato and Soichiro Hirano***

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Dear Dr. Abalos,

Thank you very much for reading our response soon, understanding our methodology and posting your second constructive comments. Following your comment, we will clearly describe the working hypothesis and its limitation for the estimation of gravity wave contribution to the residual mean circulation using reanalysis data.

Motivated by your comments posted as RC2, we were also thinking that it would be interesting to obtain the stream function using parameterized gravity wave drag provided

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by each reanalysis and compare it with the results obtained by our method. We would be pleased to add the figures and discussion for the S-RIP community.

The description of our manuscript on the gravity wave parameterization used in each reanalysis was not correct as you indicated. ERA-Interim and JRA-55 use orographic gravity wave parameterization only, while MERRA and MERRA-2 use both orographic and non-orographic gravity wave parameterizations [Table 3 of Fujiwara et al. (ACP, 2017, doi:10.5194/acp-17-1417-2017)]. Note that JRA-55 does not use non-orographic gravity wave parameterization, similar to ERA-Interim.

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