

# Quasi-biennial oscillation in a warming climate, part 2: Response of the QBO drivers

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In phase 1 of the SPARC quasi-biennial oscillation initiative (QBOi) three idealized general circulation model experiments were designed to examine the QBO's response to a changing climate. The first experiment specified current CO<sub>2</sub> amounts and climatological sea surface temperatures (SSTs), while the other two experiments were identical to this in every respect apart from a doubling and quadrupling of CO<sub>2</sub> amounts and corresponding SST increases of 2K and 4K, respectively. Eleven models or model versions have completed the three experiments. Contributions to the momentum budget from resolved and parameterised waves and mean vertical advection will be compared for the *mean* QBO-cycle in each model and each experiment to identify how these QBO-drivers respond to climate change. The relationship between changes in QBO metrics (Schenzinger et al. 2017) and the changes in individual QBO-driver will be analysed. Links between QBO variability (inter-cycle variations and variations between ensemble members) for current climate and long term secular changes in the QBO (i.e. its climate response) will be considered.

Key words: quasi-biennial oscillation, climate change, general circulation models, QBOi

## References

Schenzinger, V., and Coauthor, 2017: *Geosci. Model Dev.*, **10**, 2157-2168.