

## ***Interactive comment on “Stratospheric Variability at a glance – Analysis of the intra decadal timescale and the QBO” by Duy Cai et al.***

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We want to thank all reviewers for their helpful comments.

It became clear to us that it is hard for the reader to see our main conclusions. However, we cannot agree with the reviewers' criticism of not presenting new results.

Therefore, we want to emphasize the key points, which are to our opinion new and relevant:

the relevance of the QBO on the intra decadal time scale: the QBO signal is significantly distinguishable from background noise, regarding the intra decadal time scale aspects of MRGW and the approach to receive a vertical threshold for numerical models to simulate the QBO: using power spectral analysis method of Wheeler and Kiladis

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(1999) to spot the relevant ranges of equatorial waves ; using these identified ranges to calculate the corresponding vertical wave length; receiving a minimum vertical threshold in order to resolve the relevant waves, i.e. relevant power spectrum of MRGW need to include waves with 2 km vertical wave length (this requirement is for the MRGW is also new to us)

So our study does not focus on processes of a specific numerical model. But we can confirm the finding that numerical models need to have at least a vertical resolution of 1 km, based on a 'novel' approach. This 'novel' approach also show new aspects regarding the requirements for the simulation of a QBO.

We hope we can convince you, that is it worth to allow us to revise our manuscript in order to made our new points more clear.

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[Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2016-870, 2016.](#)

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