

Interactive comment on “Atmospheric QBO and ENSO indices with high vertical resolution from GNSS radio occultation temperature measurements” by Hallgeir Wilhelmsen et al.

Anonymous Referee #2

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The authors present two new methods in order to analyze the 4-D field of global temperature variability. They show that the QBO and ENSO signals are also visible in the temperature. The two new applications of EOF and PC analysis are clearly presented.

I am a bit skeptical if the new analysis technique really leads to new knowledge and understanding of atmospheric variability. In case of QBO and ENSO the informations of the wind changes and the water vapor loading of the troposphere might be more direct than the temperature information.

In the stratosphere, the temperature-QBO might be related to the QBO in vertical wind. It would be nice if the authors would explain the physical relationships between the

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temperature anomalies and other anomalies. What are the basic reasons for the occurrence of the temperature anomalies? Generally I recommend the publication of this article which might be a good inspiration for future studies on atmospheric variability.

Minor comments: 1) Introduction: I am missing the discussion of existing literature about the ENSO effects in the stratosphere. Do you see such an effect in your ENSO indices at stratospheric altitudes?

p.3 line 24 ... from from May 2001

[Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2017-226, 2017.](#)

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