

## ***Interactive comment on “Vertical structure of MJO-related subtropical ozone variations from MLS, TES, and SHADOZ data” by K.-F. Li et al.***

### **Anonymous Referee #2**

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Review of “Vertical structure of MJO-related subtropical ozone variations from MLS, TES, and SHADOZ data”, by Li., K.- F., B. Tian, D. E. Waliser, et al.

Review of the paper:

This is a very interesting study of MJO signals in ozone detected in measurements from Aura MLS, TES, and OMI satellite retrievals and also SHADOZ ozonesondes from Fiji. The study includes ECMWF geopotential height and TRMM rainfall measurements to help validate and to make geophysical sense of the ozone anomalies. The technique used is to break down the ozone intra-seasonal anomalies into several time-averaged phases of the MJO. This method is similar to the second method of MJO analysis described by Tian et al. [2010].

This paper is well written and does not require substantial changes. However, the paper along with the several related and cited MJO papers [including Weare, 2010] never seem to plot original time series of measurements. If a time series is plotted in these papers it is usually a constructed time series derived from the EOF/EEOF component analysis of intra-seasonal pre-filtered measurements. If the MJO variability is really is a substantial signal in the data it should be readily identifiable in the original non-filtered time series measurements. It would really strengthen this paper for the average reader not accustomed to EOF analysis if the authors could include at least one additional figure showing original (i.e., no filtering) time series in regions of the subtropics where there is significant MJO signal detected from their analyses. Perhaps one could plot original time series in these regions that have not been filtered other than removing seasonal cycles to better identify intra-seasonal variability.

Figure 9 is missing in the “printer friendly” version – it may have been a PDF conversion error or related problem. (However, the non-printer friendly version does have Figure 9 included.) All of the nine figures seem to be legible in the online PDF file (i.e., text, etc. within figures are all readable) and shouldn't require changes unless ACP has other guidelines for figures.

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