Reviewer Comment

10.5194/acp-2015-988 (Editor - Rolf Müller) Atmos. Chem. Phys. Discuss.
'Effect of tropical cyclones on the Stratosphere-Troposphere Exchange observed using satellite observations over north Indian Ocean'

General comments:

The paper is much improved compared to the previous ACPD version. Unfortunately, the submitted version of the paper with 'change track' does not show the changes related to the ACPD Version. Therefore, it is very difficult to identify all the changes. The manuscript has still some shortcomings. Therefore, I recommend some revisions to address the comments listed below before publication by ACP.

Presentation quality
The presentation quality is better than in the last version, however there are still plenty of redundant blank characters and some grammar issues. I recommend careful proof-reading by the production department of ACP.

Specific comments:

1. Introduction:

p. 3, line 55: remove blank character 'water vapor- poor' or use 'dry'

p. 3, line 65: 'Increase of water vapor in the LS region will leads to troposphere warming and stratospheric cooling might be due to lose ozone ...'
Water has major consequences for the radiative balance and heat transport in the atmosphere. Enhanced ozone loss is a secondary effect of increasing water vapor.

p. 3, line 67: remove blank character '... Change, 2007) . Even ...'

p. 3, line 67: ‘Solomon et al. (2010) reported the relation between global warming and lower stratospheric water vapor.’
Unspecific statement: please add some details

p. 3, line 71: ‘long term’ to ‘long-term’ (?)

p. 5, line 101-102: ‘..and also reported on the impact of the TCs on in the UTLS region on the regional scales.’
What does this mean?

p. 5, line 103: insert blank character ‘RavindraBabu’

p. 5, line 114: remove blank character ‘Aura- Microwave’

2. Data and Methodology

p. 5, line 119: remove blank character ‘Aura -MLS’

p. 6, line 127: remove ‘(1)’ ??

p. 6, line 129: What is the meaning of ‘best track data’?

p. 6, line 140: remove ’the’ before ’Table 2’

p. 7, line 149: ‘We have 94 $\pm$ 21 mean MLS profiles for each cyclone’ That means you use all MLS profiles for one cyclone (e.g. O3B) for all days of the cyclone period (4days) within 1000 km from the cyclone center. Is that correct? A figure showing the position of the MLS tracks (profiles) in the cyclone-centered coordinate system would be very helpful to see the data coverage.

p. 7, line 164: ’Large convection around the eye and ...’
Please add ’eye of the cyclone’

3. Results and discussion

Just for understanding: Figure 2 is for the period 2002-2013 and Figure 3 for 2007-2013. Why do you use different time periods?

Compared to the previous version of the manuscript cyclones during the monsoon season (03B, PHEt, Gonu) are in addition included in the new version of the paper (20% of all profiles). Therefore, you use a different set of MLS data for calculating Fig. 3 and 4 in the new and old version of the paper. Is that correct? I am wondering why Figure 3 and 4 are exactly the same in the new and old version of the paper. I would expect some differences.

4. Summary and conclusions

I still recommend to adapt Fig. 6. The diagram does not describe the east-west asymmetry found in Figs- 3-5. From Fig.3, it is not clear that upward transport of high ozone values from the lower stratosphere into the troposphere occurs outside of the cyclone center (red arrows) as shown in Fig. 6.

Figures and Tables:

Table 2: Please add time unit for column 'total sustained' and 'sub-stained time with maximum intensity'. The year (or date) of the cyclone occurrence would be in addition a useful information.