

## Review

### Major:

Line 753-765: Estimating trends for just TWO years is not a good ozone recovery analysis. This would not yield any good or meaningful results in the recovery context. Both LT and MLR are very sensitive to number of years considered for the trend analysis. I have also done some sensitivity tests on the impact of number of years on the trend detection. Therefore, I would suggest you to remove the two-year trend analyses from this work to make your other analysis (10-year IASI data) more robust and appealing. I would like to remind you that one of the referees also had the same opinion/comment on this. Thank you.

### Minor:

Line 1-2: please indicate the time period in the title, "the first IASI decade (2008-2018) record"

Line 32: What is meant by "decline is not categorical in to total o3"?

Line 32: "freezing the regression coefficient". What is this freezing?

Line 36: "trends over the year"? Usually it's over a time period. Not for a year!

Line 37: over the last years? How many years?

Line 39-40: it sounds that only IASI measurements are required to confirm the o3 change.

Line 51: the full-stop after the bracket

Line 62: but to be further delayed

Line 83: statistical approaches also use measurements or model results

Line 97-101: The sentence is too hard to understand. Please split and rephrase it

Line 103: what is high density here? Also join this small paragraph with the previous one.

Line 110: Usually we use the acronym LS for the lower stratosphere, not LSt

Line 119: "two years" is too short to estimate trends.

Line 121: speeding up of o3 changes? Or speeding up of ozone recovery?

Line 136: measurements of atmospheric composition? Or list some trace gases here.

Line 137: "2012, respectively"

Line 143: delete "For this study"

Line 150: what is the vertical resolution of o3 profiles?

Line 158: Please state the accuracy of the retrievals

Line 166: if 20% is the bias or accuracy, then how could that affect your statistical analyses presented, in terms of the ozone recovery estimation?

Line 177: "resulted from"

Line 181: full IASI period. Please state that particular period

Line 186: is it the “trends” or any other “tendency”

Line 192: flags determined or selected

Line 231: e.g. Wespes et al.

Line 303: it is a large range 25 to 95%. Could you please state where it reproduces the best and worst?

Line 322: delete “and discussed in this paper”

Line 336: “b, respectively,”

Line 340: “The ozone variability (i.e. 2-sigma)”

Line 368: Influence of QBO30 is greater, due to its altitude dependence?

Line 397: Yes, this has also been discussed in

*Roscoe, H. K. and Haigh, J. D.: Influences of ozone depletion, the solar cycle and the QBO on the Southern Annular Mode, Q. J. Roy. Met. Soc., 133, 1855–1864, 2007.* and in Kuttippurath et al., 2013 (you have already cited this publication in this article).

Line 437-442: Please split this sentence, too long to comprehend

Line 458: “, which”

Line 489: “Asia that matches...”

Line 560: I do not understand this 80 DU here.

Line 620: 0.90; is it 90% CI level

Line 661, 663: hyphen

Line 674: A correction: Kuttippurath and Nair (2017) discussed the vertical trends in ozone, not only total column ozone. In addition, they also discussed the ozone trends in summer months. A recent study from the same authors reported recovery signatures even at the saturation altitudes (doi:10.1038/s41612-018-0052-6).

Line 805: You were discussing about 90% in previous pages. Now its 95%?

Line 808: “to unequivocally”

Line 808: Only 2- years are required? What is the basis for this statement?

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