

Review of manuscript version 3 of "Response of OH airglow emissions..." by Ghodpage, Hickey, Taori, Siingh, and Patil.

This version has been considerably revised and improved, and thereby nearly all of my previous objections removed. Now there are only some minor issues left which should be attended before the paper becomes fully acceptable. Therefore, I still qualify this as needing minor revision, but it should be easy to implement. Even a more reasonable ordering of figures 2 (present results, first, and comparisons, later), if the authors find that worthwhile, would not require complex text adjustments.

Details, typos, wordy or unclear text, oversights, suggestions for easier reading:

L35: what does "and its usefulness" refer to? Certainly not to "the pioneering work of Meinel". Maybe, better separate Greet and Bittner references to a new sentence.

L44: Meriweather -> Meriwether

L54: not clear what the Stubbs et al. reference stands for (it's not an update to Mies ?).

L61: missing "d" in "defined as"

L71: what's meant by "by measuring one under adiabatic conditions"?

L73: delete "the" between "as" and "theoretical studies"

L91: while "unique and first of its kind" claims have their role in reports for funding agencies; in a scientific paper, wording should be less provocative (like "such a model comparison over India has not been done before").

L105: "fillers" -> "filters"

L110: better rearrange -> "with ~10° full field of view"

L112: "to to" -> "to"

L113: better rearrange -> "amplify the very weak photomultiplier output current (in the range of nA) into..."

L116: is there a need to repeat the 5 hours minimum obs time? At least, add "as mentioned".

L156: delete "at" between "atmosphere" and "in"

L157 - 161: not clear why ground-based results are discussed in this "space borne" section.

L162: delete "satellite" (SABER is an instrument). Main message (SABER data) should not be in parentheses.

L171, 172: the previous temperature/intensity bug is still there: Fig. 1a is intensity, 1b is temperature (but figure caption is ok).

L176, 177, 180: cosine fit is mentioned three times (the one in L177 would be enough).

L182, 190: as in the previous version, the numerical values of eta in these examples must be based on relative amplitudes, also for temperature. I hope this is still only a typo (where "3.60 K", "1.019 K" should read "3.6%", "1.019%", because otherwise, the eta values derived are WRONG!

L215-227: I doubt the usefulness of this long list of parameter ranges. If really necessary, it should maybe be put into a table and the discussion shortened (are there any conclusions drawn from this behaviour, except that it's similar for what other people have reported?).

L233, 234: model results have already been mentioned.

L235: what's new in figure 2a1 and 2b1 is that Kolhapur results have now been plotted separately (also, typo: "there" -> "their")

L253-255: see my comment on previous version (then, L225): it is not true that Reisin and Scheer 2004 had independent eta values "for the waves of 3000s". They only tried to understand the "relative scales of [their] intensity and temperature variances", in terms of mean eta values. So, citing that paper in the present context does not make sense.

L263: "2004" and the corresponding reference should therefore be deleted.

L266: The sentence should have ended at the end of the previous line, and "because of, it is also remains to be seen..." could be converted into a new statement (whatever the intended message; I am not sure).

L315: there is an error in the Takahashi reference; 2011 is not in the list. It must be one of the earlier papers.

L405: "chemical constituents composition" -> "chemical composition", or "minor constituents", or...?

L537: Is there really an AGU report by Meinel with this title in 1950? I am only aware of the 2 part paper in the Astrophysical Journal "OH emission bands in the spectrum of the night sky. I. Astrophys. J. 111, 555-564, 1950", and "OH emission bands in the spectrum of the night sky. II. Astrophys. J. 112, 120-130, 1950".

L578: Tarasick and Hines 1990 paper must go in alphabetic order before Trasick and Shepherd, on next page.

L630, 631: figure captions should explain the figure, but not interpret, like "A close resemblance... are notable"; such newspaper style should be avoided, in order not to distract from the essential info.

"The legends in the figure are as following" and other wordiness should be avoided. Caption should just briefly state that present results (1, 2) are compared to models (3 - 6) and previous observations (7..., 16:...). It would be more logical to show the Kolhapur results (2a1, 2b1) first, not after 2a, 2b.

By the way: "verses" -> "versus".

L653, 654: shorten to read "As figure ..., but for..." ("similar to figure..." would be too weak, since it's more than merely "similar").

L655: Main message should be "Monthly mean OH emission rate profiles from SABER, for 2010 (solid lines) and 2011 (dashed lines)".