

***Interactive comment on “Operational
considerations to improve total ozone
measurements with a Microtops II ozone monitor”
by J. L. Gómez-Amo et al.***

a. 3

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The work is interesting and helpful for Microtops II users. Especially because it covers a long period of time like 10 years and provides some useful criteria to filter the input data.

The Microtops II is really easy to use and simple to carry, thanks to its small size, but, on the other hand, is very easy to commit pointing errors and needs the presence of the operator to work, so it is not simple to perform measurements at accurate intervals, especially if tight, and in perfect simultaneity with automated instruments.

C2711

It should be specified that in the Microtops II the solid state pressure sensor is optional.

Assuming that the Microtops calibrations should be done more frequently (instead the three calibrations are too far one another), moreover they run in different places and probably with some differences in the procedure used (in fact, as the authors stress, the coefficients values for consecutive calibrations differ enough from each others), I was wondering if was really useful the choice of making a linear interpolation to obtain the calibration coefficients over the years for which the calibration is not performed, but the answer and the relative figures clearly show that it is the best solution if there isn't a calibration. Why didn't you think to perform additional independent calibrations using Brewer and Microtops II data from some of the six campaigns (as done in Veleta 2002)?

Finally there is confusion about what is the limit value for the airmass below which ozone values from the Channel I are more accurate than Channels II and III, 2.3 or 2.6?

C2712

Specific/Technical Comments:

1. Pages 7530-7538-7545: is indicated the value 2.6 as the limit for the choice between Channels I and II, instead in 7541-42 the limit value is 2.3;
2. Page 7530, line 8: *produced*;
3. Page 7531, line 3: *allows*, the “*for*” is not necessary;
4. Page 7531, line 3: *total ozone measurements*;
5. Page 7534, line 5: *measurements*;
6. Page 7535, line 16: Ω_{123} ;
7. Page 7536, line 15: *17% in the 2002-2010 period*;
8. Page 7536, line 16: *produced*;
9. Page 7538, line 14: LNV_{ij} ;
10. Page 7538, line 16: LNV_{ij} ;
11. Page 7539, line 3: *falls*;
12. Page 7539, line 4: *coefficients*;
13. Page 7540, line 18: I think, in accord with Figure 6, is not the 50% for Channel I but 40%;
14. Page 7541, line 6: *shows*;
15. Page 7541, line 12: the use of the term *absolute* is ambiguous;

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16. Page 7541, lines 13 and 17: *is considered*;
17. Page 7542, line 6: *fitting*? Instead, at the relative Table 2 is used *fit* (page 7550);
18. Page 7542, lines 9, 10, 11:
data are correctly reported? for example the offset for Channel I is *-0.1 DU*, not *-0.5*, in according to Table 2 (page 7550);
19. Page 7542, line 22: *pairs*;
20. Page 7543, line 23: *ten years*;
21. Page 7544, line 8: instead of *also presents similar*, I'd use *shows a greater daily variability*;
22. Page 7544, line 9:
in fact, in accordance with Table 3 (page 7551), the daily standard deviation for the three Microtops Channels is between *2 and 6 DU* (Lampedusa 2009 – Channels I and III, Lampedusa 2008 – Channel III);
23. Page 7544, line 16: *allowed*;
24. Page 7544, line 21: *at different sites*;
25. Page 7544, line 23: *clouds*;
26. Page 7545, line 8: *shows*;
27. Page 7545, line 9: *to limit the airmass to 3*;
28. Page 7545, line 11: *is about 2-6 DU*;
29. Page 7545, line 25: *years*;

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30. Page 7546, line 1: *Collaborations*;

31. Page 7549, Table 1:

In the note: *indexes*;

There are some errors in the determination of the $\sigma_{2002-2010}$ variable, in fact:

LNV_{12} is **-16%**, not **-14%**

LNV_{23} is **17%**, not **20**

β_{23} is **-19%**, not **-20**;

32. amtd-4-C2663-2012-supplement, Page 1:

To be precise, is *Figure 1, 2 and 3*, not *Figure 1 a, b and c* (the same for other cases), and is $\mu < 1.2$, not m ;

33. amtd-4-C2663-2012-supplement, Page 1:

The RDEV, observed at airmass 1, is **-20%** and **18%** for Channel **II** and Channel **III** respectively, not Channels **I** and **II**.

C2715