Dear Dr. Doche,

With regards to your manuscript, I think that minor revisions/technical corrections are still needed before acceptance for publication in ACP. Below are my specific comments.

1. Different domains are used from Fig. 1a-1b to Fig. 1c. Could the same domain be used in Fig. 1 as in Fig. 2? Since both Fig. 1b and Fig. 2c are for "2007-2012 Summertime (JJA) Mean 500 hPa Vertcal Velocity (Pa.s-1)", perhaps Fig. 2c should be skipped. There are some default values at grid cells around (-8^{o} latitude, 32^{o} longitude) in Fig. 2c. However, these defaults values cannot be found in Fig. 1b for the same grid cells.

2. There are several places in the text referring to a county for the geographical position (e.g., Greece in Line 44-46; Turkey in Line 217). This might be difficult for the readers who are not familiar with the Mediterranean geography to understand what region(s) you mean since the country's names are not labeled in the figure. It is stated "A land/sea mask has been applied to calculate the averages only over the Mediterranean sea" (Line 181). It would be suggested that such sea areas be displayed in one of the figures.

3. At the right-upper corner in Fig. 2a, there is a sharp gradient in ozone mixing ratio along the border (maybe the cost), from ~70 ppb in a green area to 80-90 ppb in the surrounding red areas. It is really difficult to understand this "phenomenon" considering that ozone is a secondary pollutant and the difference in the processes triggered from the surface may not have such a great effect.

4. A different domain is used in Fig. 3 than in Fig. 2, with the latitude value being extended to 70^{o} N in the former. As a result, the gradient in ozone mixing at 10 km over the Mediterranean, if present, might be smoothed out since a larger scale has to be used to display much high ozone value at higher latitudes. It would be suggested that the same domain be used in Fig. 3 as for Fig. 2, focusing on ozone over the Mediterranean. Meanwhile, discussions on the south-to-north gradient of ozone at 10 km (Line 246-255) can be skipped as this has been a well-known

character in the NH.

5. Line 4: Please provide the full name of IASI. Please reconsider the title for Sect. 3 (Maybe “IASI” can be omitted. It seems not to be a right expression with “on a 2007-2012 period”).

6. Some words are not appropriately used in the text, for example, “higher troposphere” (L22 and later on), “has been made evident” (L55), “has been underline” (L60), “interesting datasets” (L72), “offer a maximum of sensitivity” (L79), “meteorological forcing” (L105), “between 3 and 4 pieces of information” (L117) ”, “largely polluted region” (L121), “at the upper troposphere” (L166 and later on), “To be compared to” (L186), “it should also considered” (L225), and so on. Although the editorial office provides an English copy-editing service, it would be nice that you ask an English native speaker among your colleagues to polish the English first.

Please do not hesitate to contact me if you have any questions.

Best regards,
Jianzhong Ma