

Editor's comment on the accepted revised version of ms. acp-2015-531 by Bougiatoti et al., entitled "Biomass burning impact on CCN number, hygroscopicity and cloud formation during summertime in the Eastern Mediterranean".

Thank you for your revision that improved the paper. I accept your manuscript for publication in ACP pending some technical modifications detailed hereafter (changes are underlined):

-Decapitalize "eastern" in title, "southern" in line 65, "western" in line 322, "northern" in line 646.

-Line 37: "similar trend as".

-Line 63: "consists in".

-Line 70: "in termss".

-Line 76: no comma before "that"; probably "impacts" should read "impact"; remove "on".

-Line 92: specify "air masses".

-Line 110: "BB-related CCN".

-Line 117 : specify "Finokalia atmospheric background station".

-Line 123: "from mid-August to mid-September 2012".

-Line 127: "(2014)" within parentheses.

-Line 142: remove the spare ";".

-Line 146: new paragraph.

-Line 215: "E and C are".

-Line 216: no comma before "(2001)".

-Line 221: replace the first "is" by "expresses".

-Line 225: comma after "respectively,".

-Line 226: "most probablel value".

-Line 234: "variance of κ^* ".

-Line 248-250: unclear sentence, especially "by including and index".

-Line 253: "parametert".

-Line 291: new paragraph.

-Line 299: insert a space before the hour in "before_11:34".

-Lines 307-308: "19% up to 1.25 km height and less than 6-10% above (1.25-2 km)".

- Line 338: “Based on”.
- Line 364: remove spare “.”.
- Line 369: rather attach this paragraph to the preceding one; “indicate” with no terminal s.
- Line 374: “0.068%”.
- Line 375: “90%”.
- Lines 379-380: I suggest “Their concentration, however, significantly increased during”.
- Line 384: insert a comma after “composition”.
- Line 387: “possible”.
- Line 389 “a NPF event”.
- Line 399: insert a space before the left parenthesis.
- Line 416: no comma before “that”.
- Line 420: insert a comma after “slope”, and after “population”.
- Line 429: you probably have a double space before the left parenthesis.
- Line 461: specify “probably small influence”.
- Line 462: make 2 sentences: “cloud processing. Based on cloud droplet”.
- Line 464: remove “are”.
- Line 482: insert a comma after “influence”.
- Line 485: specify “only 14%”.
- Line 490-491: reorganize: “that the κ value of primary aerosol decreases as the organic mass fraction of aerosol increases (Petters”.
- Line 510-511: reorganize “as organics become less volatile with atmospheric processing”.
- Line 526: you probably have a double space before “than”.
- Line 530: reference “Kalkavouras et al., in review” is reported as in preparation in the reference list; please remove the citation if it is still in preparation, or change accordingly in the ref. list if it is now submitted.
- Line 532: final part of the sentence “that corresponds to each fire separately” is unclear to me.
- Line 554: insert a comma after “conditions”.
- Line 555: insert a comma after “(2013)”.
- Line 562: you probably have a double space before “between”.

- Line 565: “gives”.
- Line 568: insert a comma after “time”.
- Line 570: “that allowed”.
- Line 583: “presence of”.
- Line 587: insert a space after “sizes”.
- Line 592: “to 90% RH”.
- Line 598: “may result from”.
- Line 621: specify “by the CCN counter”.
- Line 641: insert a comma before “ of 44%” and remove the comma after “and”.
- Line 663: replace “from” by “under”.
- Line 669: do you mean “applied to the larger particle size (120 nm)”?
- Line 684: “and that hygroscopicity”.
- Line 710: replace “but LWC as well” by “and LWC”.
- Lines 717 and 724: you probably mean “Morales Bettencourt and Nenes, 2014”.
- Line 729: the distribution “displays”.
- Line 731-732: interchange the 2 references to respect their chronological order.
- Lines 735, 743, and 749: insert a space in the unit “ms⁻¹”.
- Lines 742 and 743: specify “(11.9±2.7)%” and “(18±5.9)%”.
- Lines 754-755: “the largest particles” (remove “of”).
- Line 756: insert a comma after “respectively”; specify “they were”.
- Line 792: insert a comma after “N_d”.
- Line 813: place “however” between commas.
- Line 818: “measurements confirm”.
- Line 834: “homogenize the aerosol. However,”.
- Line 835: correct the double “were seen “; do you mean “even at”?
- Line 869: “largest particles” (remove “of”); “150 nm in diameter” (insert a space and “ in”).
- Line 872: do you mean “BB augments”?

- Line 874: “the largest aerosol” (remove “ of”).
- Line 875: activate and are exposed”.
- Line 877: add a comma after “composition”.
- Line 890: insert a space before “FRONT”.
- Line 903: please add that “This study contributes to ChArMEx work packages 2 and 4, respectively on chemical aging and regional aerosol-climate interactions.”.
- Lines 906-908, and 1064-1066: References by Adler et al. (2011), and Nguyen et al. (2013) do not seem cited; please check others.
- Line 914: remove initial dot.
- Somme citations added in the revision process are missing in the section References: e.g. Pilinis et al., 1995 (cited in lines 74-75), Kanakidou et al., 2005 (line 77), Wu et al., 2013 (line 555); please check others.
- Lines 1093-1094: check reference style for this ref. (Roberts et al., 2013).
- Line 1163: specify “relative contribution to this variance”.
- Lines 1163-1164: mention the symbols “(κ)” and “($N_{aerosol}$)” in the table legend.
- Line 1175: remove “just”.
- Tables 2, 3, and 4: align numbers to the second decimal with a terminal 0 when necessary (e.g. 0.28 ± 0.10 and 0.30 ± 0.10 in the κ_{HTDMA} column of Table 2).
- Table 5: align dots in the 6 columns of results.
- I worry about figure quality once printed in the ACP format; you probably need to split and enlarge the various plots in figures 5, 6 and 9, providing each figure across 2 pages; plots in figure 4 and possibly others need to have their vertical dimension stretched.
- Figures 6, 7, and 10: grey shaded areas appear on screen but do not print on my color printer; can you imagine another way (boxes ?); I do not see in Figure 6 the circles mentioned in the legend that would represent the smoke plume arrival time.
- Last 2 figures in the Supplement are numbered “S3”: the last one should be renumbered “S2” and be shifted accordingly before the preceding one.
