

Interactive comment on “Simultaneous coastal measurements of ozone deposition fluxes and iodine-mediated particle emission fluxes with subsequent CCN formation” by J. D. Whitehead et al.

Anonymous Referee #2

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The authors present simultaneous ozone deposition and untrafine particle emission flux measurements over an infra-littoral zone at the Station Biologique de Roscoff in Brittany, France. The measurements were part of the larger RHaMBLe field campaign. Both fluxes were measured by eddy covariance. The author's present data which shows: 1) enhanced ozone deposition at low tide; 2) enhanced ozone deposition during the day time low tides relative to the night time low tides when low tides coincided with the middle of the day and night; 3) ultrafine particle production at low tide during the day and 4) a very compelling correlation between particle production

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and ozone deposition for a 2-3 day window. A correlation over a larger time window or multiple time windows would have been even more compelling but that is the nature of this kind of field study. Results are clearly consistent with proposed tidally driven iodine and ozone mediated particle production mechanisms. Overall the paper is well written and is a valuable contribution to our understanding of coastal aerosol processes.

Specific minor comments (these are by no means crucial to the manuscript being published):

1. The inset in Figure 1 does not seem to be referred to in the text and seems buried in the figure. Perhaps a stand alone figure that is referred to in the second paragraph of the introduction.

2. There is mention of typical corrections applied to the eddy correlation flux measurements but there is no mention of the magnitude of the corrections. The authors should also state their estimated final uncertainties for the ozone and aerosol flux measurements.

3. 20576; line 18; What percentage of the data was rejected?

4. 20569; line 28: “found” should be “showed”

5. 20574; line 22: remove the “were”

6. 20575; line 2: remove the +- symbol

7. 20577; line 2: remove “number of data points” $n=$ should suffice

8. The discussion of figure 4 starts with figure 4b and ends with figure 4a. The figures should probably be the other way around.

9. 20578; line 23: should be “ranged from 0-7.8”

10. 20579; lines 12 and 14: insert a “the” before “open ocean”

11. 20579; line 25: either “during chamber measurements” or “in chamber measure-

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ment results”

12. 20580; line 18: rather “on a timescale”

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