

## ***Interactive comment on “An Overview of the Surface Ocean Aerosol Production (SOAP) campaign” by Cliff S. Law et al.***

### **Anonymous Referee #2**

Received and published: 1 August 2017

This manuscript provides an overview of the multi-disciplinary SOAP cruise off the coast of New Zealand in 2012. I believe such an overview is important and that the manuscript should be published with the following modifications:

1. Line 37 You don't show a correlation between chlorophyll-a and DMS<sub>sw</sub>.
2. Line 80 You are mixing aerosol mass and number here.
3. Line 173 What is secondary production?
4. Line 199 Should read “aerosols and their precursors”.
5. Line 263 Could you please give more details on the bubble chamber.
6. Line 263. The Supplementary table should be in the main manuscript. It would be

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helpful to have a reference for each measurement.

7. Line 276. What do you mean by “biogeochemical signals”?
8. Figure 5 needs to be larger to make it more readable.
9. What is the light blue line in Figure 6b?
10. Line 340. Aerosol number concentration. . . .
11. Line 386. CCN data should include the % supersaturation. Were all measurements made at the same supersaturation?
12. Line 389. My guess is that the CCN activation ratio was higher because the particles were larger. I doubt if it has anything to do with the 3 conditions you mention.
13. Line 390. This could be the explanation or it could be coagulation.
14. Line 454. Can't you say how the three DMS instruments compared?
15. Line 490. Can the comparison be quantified here?
16. Line 510. What was the result?
17. Line 576. Influence of SSM on air-sea exchange?
18. Line 579. Entrainment. Can you say more about this in the manuscript?
19. Line 584. Chl-a is an indicator of plankton biomass, not productivity.
20. Line 602. Where are the rest of the data available?
21. Figure 2. What is the line?

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Interactive comment on Atmos. Chem. Phys. Discuss., <https://doi.org/10.5194/acp-2017-535>, 2017.

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