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Ocean Science Discussions

Interactive comment on "Technical Note: A low cost Unmanned Aerial Vehicle for ship based science missions" *by* E. Waugh and M. Mowlem

Anonymous Referee #2

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General comments

The authors are motivated in their development of an UAV to fill gaps in scales of interest between in-situ and remotely-sensed data. This seems like a fairly useful objective. However, as I read the paper I was a little less enthusiastic about the longterm success of the deployment of UAVs from research vessels.

Figure 4 is very informative of the potential fate of these aircraft. It is also worth noting from this photo that the sea is extremely calm, with no whitecapping whatsoever, indicating a wind speed of no more than 5 m/s. It begs the question: if the UAV cannot be recovered under these conditions, what hope is there for the kind of conditions where the authors have demonstrated the applicability to a scientific application i.e. whitecapping?

On the issue of determining whitecapping as an application: there is little motivation for doing this from an UAV as opposed to a ship. For the former one gets more coverage per unit time, but the latter can provide realtime, uncompressed, video data during the time the ship is at sea.

I think in principle that this is a neat idea, but in practice I don't believe that it is feasible. I also think that the authors have gotten things reversed i.e. technical developments should be motivated by a specific scientific problem, and not "solution" for a variety of different scientific problems.

1. Does the paper address relevant scientific questions within the scope of OS?

This should be answered by the editor.

2. Does the paper present novel concepts, ideas, tools, or data?

Deploying an UAV from a ship seems to be novel, but it's easy to be novel if success is not a requirement.

3. Are substantial conclusions reached?

I would say that successful deployments of UAVs from a ship is speculative.

4. Are the scientific methods and assumptions valid and clearly outlined?

Yes.

5. Are the results sufficient to support the interpretations and conclusions?

The whitecapping calculation appears to be dubious. I might sugest that the image is probably showing sunglint rather than whitecapping.

6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)?

I am not sure if anyone would be motivated to deploy an UAV from a ship after looking at figure 4.

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7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?

I believe so.

8. Does the title clearly reflect the contents of the paper?

Yes.

9. Does the abstract provide a concise and complete summary?

Mostly.

10. Is the overall presentation well structured and clear?

Yes.

11. Is the language fluent and precise?

Yes.

12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?

N/A

13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated?

This is a matter for the editor and/or authors.

14. Are the number and quality of references appropriate?

I believe so.

15. Is the amount and quality of supplementary material appropriate?

N/A

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Interactive comment on Ocean Sci. Discuss., 7, 757, 2010.

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