

Interactive comment on “A Simple Method for Retrieving Significant Wave Height from Dopplerized X-Band Radar” by Ruben Carrasco et al.

Ruben Carrasco et al.

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The authors are thankful about the reviewers comments. We improved the manuscript based on the comments as follows (changes are highlighted in blue):

1. *"What happens in presence of a bimodal (or mor complex) waves? In other words could the authors explain how the results are affected by the angular spread of the wave spectrum?"*

As this important question is also pointed out by another reviewer, we modified the part of the manuscript that addresses this problem as follows:

C1

Page 6, Lines 30-33: "Additionally, multi-modal seas are expected to influence the accuracy of the method, because the energy of the second wave system is not caught by the radar if the secondary peak wave direction differs strongly from the first. **The energy of a second wave system travelling perpendicular to the antenna view direction would be underestimated due to a reduction of the radial velocity variations by projection effects. As the German Bight of the North Sea is not influenced by high energy swell events this might be a major issue in the open ocean where the presence of pronounced swell systems is more frequent.** For older sea states (or long waves) an underestimation is expected because linear wave theory has not been applied to transform the horizontal orbital speeds to surface elevation."

2. *"line 15 pag. 3 do the authors refer to fig. 5C?"*

If it is correct that this comment refers to Page 4, Line 16, yes, we refer to Figure 5 C). This was corrected in the revised manuscript.

3. *"line 14 pag 5. 'radar' instead of 'ridar'"*

Error was changed to: "... scatter plot of significant wave heights resulting from the buoy versus those of the **radar**".

4. *"line 15 p. 5 What is 0.09m?"*

The number was a relict from a previous version where it referred to the AWAC vs. buoy RMSE. Thank you for pointing out this error. We modified this part: "Furthermore we compared the radar retrieved significant wave height to the AWAC results and the AWAC to the wave rider (Table 1), showing an overall excellent agreement of radar retrieved significant **wave heights** with those that can be obtained by well accepted measurements (**RMSE approx. 0.24 m**)"