

Interactive comment on “Measuring currents, ice drift, and waves from space: the Sea Surface Kinematics Multiscale monitoring (SKIM) concept” by Fabrice Ardhuin et al.

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We thank our colleague for the kind and detailed comments and questions. We also note that we have completely redone the analysis of Appendix B after we realized that we had perturbed the elevation and not the pointing angles, which gave a different periodicity for the error due to attitude miscalculation.

Below a point-by-point reply. In bold are the reviewer comments and our comments follow in normal font.

The clarity of the appendices is not as good as the main body of the text and

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could be improved. The only large gap is a clear description of the products that are expected.

We have worked to improve the readability of Appendix A. As for Appendix B it was completely rewritten based on new simulations.

Major comments: 1) Page 8 9: The goal is clearly stated to be the retrieval of the Eulerian velocity. However, the velocity including Stokes drift will be of use for many topics (e.g., oil drift and air-sea fluxes). Will the Stokes drift also be made available?

The (quasi-) Eulerian velocity will be particularly used for the Level 3 product (multiple swaths with mapping in space and time) because of the rapid variation of the Stokes component which will also be provided in Level 2 products. This is now clarified.

Minor Comments: 2) Page 2, line 23: ATI provides speeds or more accurately vector components rather than velocities. Similar errors in word usage should be corrected throughout.

We have clarified the use of “speed” and “velocity”

3) Page 3, line 7: at (UGD) to the end of the line.

We are not sure how to understand this comment.

4) Page 5 line, 2, change ‘sea surface U_s ’ to ‘surface U_s ’

This has been corrected

5) Figure 10 would be better with a sharper color bar

This has been corrected

6) The clarity of the caption for fig. A1 should be improved

We have corrected the caption as follows: Illustration of the use of cycles in azimuth θ' (circles) for the estimation of the integrated parameters at the location (black square)

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of cycle with direction θ .

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