

## ***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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Please find below a point-by-point reply. In bold are the reviewer comments.

**The clarity of the appendices is not as good as the main body of the text and 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 independent and new simulations that include a random (but slow) attitude error compared to the previous random linear trend over 20 s.

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**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 3a 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  $\theta'$  (circles) for the estimation of the integrated parameters at the location (black square) of cycle with direction  $\theta$ .

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