To Dr. John M. Huthnance, Topic Editor

Many thanks for your careful re-reading of our manuscript, and for making the useful suggestions and corrections needed to ensure it is more readable. We have made the following corrections:

We have modified « signal-to-noise » to be “signal-to-noise ratio” throughout, as suggested : in the Abstract, page 3 line 10, page 3 line 17, page 14 line 8, figure 4 caption, etc.

(Introduction)

Page 1 line 30. “westwards” Done

Page 2 line 18. “. . interactions so that they become” reads better I think. Done

Page 3 line 4. “,” after “estimate” Done

(2.2 Glider data)

Page 5 line 9. Better “Jason-2 track in Sept-Oct . .” (i.e. “in” – or “during” – not “from”). Done

(3 Spectral Analysis . .)

Page 7.

Line 23. “or” -> “of” or “for”. Done

Lines 27-30. I think the units here (cm\*\*2/cpkm) and in Figure 4 (m\*\*2/cpkm) should be the same. I don’t mind which; although mks are generally favoured I appreciated that cm (and cm/s) provide a better scale here. We also though that the cm/s is easier to understand than the mks units requested by the reviewer. However, clearly the reviewer felt strongly about this, and we have respected his point of view – and thus changed the manuscript to match the units in MKS given in Figure 4.

(4.2 Saral / Glider . .)

1. Page 10 line 12. “cm/s” – I don’t mind but there was a reviewer comment about units. Modified to MKS

(4.3 Cryosat-2 / Glider . .)

Page 11.

Line 6. Better “42.1°N, are . . intense in” Done

Line 7. “have” -> “had” Done

Line 13. Omit “,” after “Jason-2” Done

Line 18. “cm/s” – I don’t mind but there was a reviewer comment about units. Modified to MKS

(5 Co-located . .) NB my preference for spelling here.

Page 12 line 28. “-” -> “,” Done

Line 29. “low” -> “weak” [This is a particularly strong case for changing from “high” or “low” to a more appropriate adjective. There are other places where I would not have used “high” or “low” – you might like to consider this]. We have changed this to be weak as suggested. Clearly we need more breadth in our vocabulary !

Line 33. I suggest “Planned future analysis . .”. [The first comment of Reviewer 1 is probably the most substantial of all and you wrote a paragraph in reply. However, this sentence seems to me to be the only response in the manuscript itself. Adding “planned” will make clearer in the paper that you have taken the comment on board.] We have added « Planned » here as suggested. However, we have also added a paragraph in the discussion to be clearer that we have thought about the comment from the first reviewer. I apologise that this was intended but not performed in our previous response :

« Another potential way to cross-validate the feature scales observed by the different altimeter missions is to use the crossover points between different missions. Figure 1 shows that there are many crossover points during this analysis period, especially from Cryosat-2 on its long-repeat 369-day orbit and even from Jason-1 which moved into a long-repeat 406-day geodetic orbit from April 2012-1 July 2013. Our analyses of the small, fast-moving features in this paper indicate that we really need crossover measurements overlapping within 1-2 days to capture these fine-scale features. These multi-altimeter overlapping passes are also interesting for the missions on a similar inclination, since their overlapping sections can be quite long, eg Saral & Cryosat may have long overlapping sections with a time difference of less than 2 days (see Figure 1). Similar long sections may be available from the Jason-1 geodetic mission & Jason-2. At present, we are developing the code to calculate the crossovers from multi-satellite passes and select the passes based on their time differences. This analysis will be performed as part of our ongoing work in this region. »

(6 Discussion)

Page 13.

Line 24. “smaller-scale” (or “finer-scale”)? Done

Line 30. “co-location”? Collocate (d / tion) has been changed throughout to co-locate (d/tion)

Page 14 lines 11-12. “. . extend the observations (duration and offshore extent) of the Northern Current and recirculation near Toulon.”? [Your present text suggests that the combined observations extend the currents!] Ahh yes, dodgy wording. Perhaps the extra radiation from the radar systems is pushing them offshore ? We have modified the text as you suggest.

Table 1 footnote 2. Omit “second” (I don’t think it helps)? Done

References. I have not generally checked these but Guilhou et al. 2013 and Millot 1999 cited on page 1 are missing. “Guilhou” or “Guihou”? We have added these references and double-checked that the rest are consistent with the revised text.

Figure 2. The values across the bottom are cpkm (to tally with the top). Cpkm = wavenumber/(2pi). Done

Figure 3 caption. Page 21 line 8. “dependent” (spelling). Done

Figure 4. The panels seem to be swapped (<->).Done

Figure 6 caption. Page 21 line 5. “co-located”? Done throughout

Figure 7 panel a. Following up a reviewer comment, maybe the red arrow should be labelled “0.1 m/s”.

Figure 9 caption. Page 24 line 2. “Co-located”? Done throughout

Figure 11 panels b, c, left side. What are the red curves? Unrelated curves from a previous analysis. They have been removed.

We thank you for your suggestions to improve the readability of our manuscript.

Sincerely yours,

Rosemary Morrow, Alice Carret & co-authors