

Interactive comment on “Characterising the ocean frontier: A review of marine and coastal geomorphometry” by Vincent Lecours et al.

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We thank you for your time reviewing our manuscript. We are currently working on addressing the three reviewers' comments while awaiting the decision of the editor.

Please find below a point-to-point summary of your main comments and how these will be addressed. In general, the text will be thoroughly revised to make it more succinct. As can be observed in our answers to the reviewers' comments below, this will entail a reduction of chapter 2 and a revision of chapters 6 and 7.

1. I think that the chapters are fine, but I would create tables with the references, avoiding what may be regarded as a long list of literature. Using tables, where the most important papers are reported, section by section, and using the text to discuss the importance of those findings may be more convenient, and a context may be built

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for the references; thus the listing would be avoided, the text would be more readable, and most of the references would be included in tables.

We will consider moving the references reported from the text to specific tables to make the text more readable.

2. Having said this, I think the authors should report on their thinking as derived from lessons learned from the literature. As the paper is now, that task is partly derived to the reader, and it is hinted at in the conclusions with the 5 major points highlighted by the authors.

We will include a section in chapter 7 on the lessons learned from past work on marine geomorphometry (particularly the limitations) and how these could be addressed in the future. We also welcome specific suggestions based on the experience of the reviewer.

3. The introduction would benefit to the references to the most recent reviews about high resolution data and earth surface processes, specifically (Passalacqua et al., 2015; Tarolli, 2014). This would also hint to the current limits or merits in marine geomorphometry as related to this wider context of earth surface processes.

A comparison with the more recent work in terrestrial geomorphometry will be made in chapter 7 to highlight the merits/limits of marine geomorphometry. We however note that the work of Passalacqua and colleagues is already included in the manuscript.

4. As stated above, the manuscript as of now is a bit on the long side. There is a lot of pages focused on data collection and processing. While this is transversally useful, it hinders the part of the paper which is specific to the theme of the review (marine geomorphometry). Currently, chapter 2 appears more as a technical report on the different techniques. The basic technical descriptions could be strongly reduced and referred to relevant sources, focusing more on the merits and limits of the different technologies, underlining the areas where there is still room for progress specifically for the field of marine geomorphometry.

We agree to remove the excessive details on data collection and processing and focus on the characteristics of the data collected within each technique, which is still very relevant to geomorphometry.

5. All the softwares reported in the article could be nicely organized and referenced in a table, so that a reader can have quick access to their name and location, and eventually reporting also the works that used one software or the other.

We will move the software reported from the text to specific tables to make the text more readable.

6. Chapter 3 feels somehow not linked to the review. The chapter about scale could be merged to the different technique described in chapter 2, again highlighting the difference in scale as merit or limit of each technique, for example.

Generation of a surface model plays a crucial role in the geomorphometric approach. To address this comment, we will cover the issue of spatial scale in chapter 2.

7. Chapter 5 and 6 seems redundant. They could be merged together explaining what technique was used in the different studies.

We prefer to keep the description of the techniques separate from the discussion of the application of geomorphometry. However, we will revise chapter 6 to ensure there is no needless repetition of the techniques described in chapter 5.

8. I found table 2 very interesting, but surprisingly this is reported only in reference to chapter 6.2, while it could be reorganized grouping the works also according to the aim, not just the technique.

We will modify the table by classifying the references according to the main theme of the study.

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