

Reply Reviewer #2 to author's comments (AC1) and revised manuscript egushere-2023-211

I have read the author's comments (revisions) in the interactive discussion and am very happy to see that the authors added simulations to investigate the boundaries between classes of dunes to strengthen their dune classification (Appendix 4 clarifies this; strong addition to the paper). And also, happy to see that they did a few tests to answer the questions that arose from the first manuscript. The revised manuscript now reads as a consistent paper. The extensive results in excellent figures with improved discussion all valuable contribute to the knowledge of the impact of dune lee-slope shape on flow (special thanks for rewriting lines 409-416 in the revised manuscript). A great paper to publish!

In reply to their comments, I very much like the figure with the slope-dependent critical shear stress for incipient motion. Because the effect is only small and the figure more complicated to read, the authors decided to not use this figure and added text to the discussion (paragraph 4.4; which is good); perhaps it is an idea to mention this (still) in the caption of Figure 8, e.g. add at the end "(not adjusted for slope effect, see section 4.4)"? This is just a suggestion, = up to the authors. With the added paragraph on three-dimensionality of dunes, the modelling work of Nathaniel Bristow (over barchans) is interesting as well. (Just pointing out; no need to add to the manuscript, because that would need explanation barchans vs river dunes etc. and there are ample references in the text as it is.)

All new in-text citations all seem to have been added to the Ref List (merely quick scanned).

A few minor text corrections in revised manuscript:

Line 246: High-angle dunes.... represent (delete 's' in represents)

Line 389: add a period at the end of this last sentence (By the way for all figure captions, a period could be added at the end.)

Line 394: Furthermore, the dune shape investigate is (shape=singular); or, preferably: dune shapes investigated are (=plural)

Looking forward to seeing this as a publication

Dear reviewer,

Thank you very much for reading our revised manuscript. We are very happy that our revisions are appreciated. We have corrected the three small corrections that you suggested, as well as added "not adjusted for slope effect" in the caption of Figure 8 as suggested.

Dear Alice and Julia,

Thank you for all your hard work with the manuscript revisions. I am delighted to inform you that the paper has now been accepted for final publication subject to 'technical corrections'. This means there are 2-3 minor changes as identified by one of the reviewers that can be carried out without any further need for review etc.. If you could carry these out then the paper can proceed to final publication.

All the best,

Tom Coulthard

three minor technical corrections required as identified by the reviewer in their report,

Dear editors,

We are very happy with the handling of our manuscript and pleased that it can be published by Earth Surface Dynamics as an open access paper.

Alice & Julia