Responses to comments from reviewers

To reviewer 1:

Dear Lorenzo Lipparini,

Thank you for taking the time to provide such detailed and constructive feedback on our manuscript. We greatly appreciate all your thoughtful comments and suggestions, which are helpful to improve the quality and clarity of our work. In response, we have made several modifications to the Introduction, Discussion and Conclusion sections. Additionally, we have carefully rechecked our manuscript to eliminate the repetition and inconsistency of some contents. We have also included more detailed descriptions and evaluations of the classified results, along with a thorough comparison to the expert interpretation results. The related modifications are shown in the responses and marked in the manuscript revision history.

Thanks!

However, in order to improve the manuscript and get to publish it, I would suggest:
1. - avoid repetitions (some concepts are reported 2 to 4 times)
   Thank you for emphasizing this point. We have carefully rechecked the manuscript and addressed the repetitions of some concepts. For example, we have simplified or changed the expressions to reduce the times of same repetitions (such as, three strategies of …, massive-scale, feature-rich, benchmark dataset of seismic facies)

2. - limit the introduction to introduce the work only, not to describe it all in summary. Lines from 46 ("Initially, ...) to 50 should be better used to introduce the "Methodology" part (2)
   Thanks for your advice. We have modified this paragraph by removing this section ("Initially, …") and incorporating a description of the current dataset construction methodology: "Currently, the construction of the dataset …". (Lines 44-49)

3. - expand a bit the discussion and the comparison between predicted results and expert interpretation, as this would be of strong interest for readers, after all the work done to get there. More examples, in section, map and 3D view would be a benefit to the article.
   Thank you for highlighting this important point. We have included additional 2D profile results along the inline direction, as shown in Fig.13 and Fig.14, and provided some additional assessment of the predicted results, including the trend of reef-top interface reflection axis and the accuracy of patch reef. Additionally, we have added the comparison of trends and details between our predicted results and expert interpretation results. (Lines 202-205 and Lines 214-216)

4. - discuss a bit how the scale of observation and the scale of the observed/classified objects have been considered within the workflow.

We appreciate this feedback. We have expanded our discussion on how to define an appropriate scale for the sliding window in our manuscripts. (Lines 157-190)

5. - more clearly separate discussion from conclusion

Thanks for your suggestion. We have modified the content and structure of the Discussion and Conclusion sections to ensure clearer separation. For example, we have modified the Discussion to offer more insightful and objective analysis of the final dataset construction and predicted results, as well as also providing a deeper examination of the limitations associated with these processes. (Lines 223-247) Besides, we have also revised the Conclusion to not only include a summary of the entire work and its significance but also to incorporate directions for the future research and developments. (Lines 266-271)

6. - the sentences at line 222 (Although the predicted results are roughly consistent with the human interpretation results), and line 249 (..achieves notable performance in seismic facies classification across two distinct 3-D field datasets), appear quite different from the one in line 12 (The predictions are highly consistent with expert interpretation results), and line 221 (Our final sedimentary facies result ... is highly consistent with the expert interpretation of sedimentary facies shown in Fig. 12e). Please consider these inconsistencies

Thank you for offering this thoughtful comment. We have corrected these inconsistencies.

7. - the conclusion could be improved, as they appear as a summary of the work done, not really a conclusion, while part of the conclusion and future developments are reported in the discussions.

Thanks for your suggestion. We have modified the structure and content of the Conclusion, adjusting the contents of future developments from the Discussion section to the Conclusions. (Lines 266-271)