Major comments

1. The treatment of river and tide dominated deltas is confusing. On L186 you say that we neglect W- and T- dominated, but then you do treat them in Fig. 7a. You state that you looked at quantitative metrics for process dominance (L300), but don't give details of any cutoff (e.g. 50% river dominated). I don't mind if you didn't go this specific: one of my key takeaways is that the process regime doesn't particularly influence the angle, which is nice and a worthy paper conclusion. Then in L371 it sounds like wave dominated deltas were omitted from the statistics.

We understand some of the confusion regarding wave- and tide-dominated deltas and have addressed these in the text. To clarify our terminology, we elaborate further on our delta classifications in section 3.4 distinguishing wave- and tide- "dominated" and "influenced" deltas. Wave-dominated deltas (e.g., São Francisco, Eel), are characterized by strandplanes and a complete absence of bifurcations. Wave-influenced deltas retain features such as strandplains but exhibit clear, measurable channel bifurcations. Similarly, tide-dominated deltas (e.g., Fly, Yangtze) have a limited number of channels that widen substantially seaward, whereas tide-influenced deltas show channel widening in the most distal channels. We combined these morphological criteria with established classifications (Broaddus et al., 2022; Galloway, 1975; Nienhuis et al., 2015, 2018; Paniagua-Arroyave & Nienhuis, 2025; Vulis et al., 2023) to categorize the deltas included in our analysis. All classifications and measurements for individual deltas are provided in the Supplementary Information, enabling this dataset to be reused and reinterpreted under alternative delta classification schemes.

2. L253, Several aspects of network mapping need to be described better. Particularly, is there a lower limit of channel width that you stop measuring at? Do short side branches or tie channels count as channels? I don't mean for you to be endlessly bogged down in these choices, but it would be good to include your choices and shapefiles as a supplement so that your work can be introduced.

We have clarified in the revised text in section 3.1 that channel mapping begins at the first observable branching point and includes all channel segments that either enter a body of water or terminate on land. Tie channels were generally excluded, as most delta channel networks in our dataset discharge into open water (e.g., Fig. 1). In rare cases where tie channels were morphologically indistinguishable from distributary channels, they may be included.

3. L393 I don't believe that Normalized Channel Length is defined anywhere. Is it a channel length divided by apex channel width? Average channel width of the reach? It might be interesting to cite Jerolmack (2009), which does the same normalization.

Thank you for identifying this oversight. We now explicitly define normalized channel length as channel length divided by the initial first-order channel width, following the methodology of Edmonds and Slingerland (2007). To further clarify and contextualize this approach, we have also added a citation to Jerolmack (2009), which applies a similar normalization method. This definition and supporting references are now included in Section 3.2, alongside our description of normalized channel width values.

4. In section 5.1 you discuss how small angles are more likely to be from a fan than a delta. Are you arguing that 60 or 64 degree average angle is a good cutoff for fans vs deltas? A number like this would be really helpful, but I think it requires some statistical modeling beyond what is here. For example, if you had just 2 measurements on an ancient system and their average was 66 degrees, you wouldn't have much confidence. I'm not requiring more analysis, but this is an important passage and as yet we don't have good guidelines for applying this work.

We agree that Section 5.1 was lacking in clear guidance for how our results could be applied to future work. In the revised manuscript, we have clarified that while our dataset shows that smaller angles are generally more likely to occur in fluvial fans compared to deltas, we do not intend to suggest a strict numerical cutoff (e.g., 60–64°) for distinguishing between the two systems. We now emphasize that reliable application of this metric requires sufficient sample sizes ($n \geq 10$) and should be interpreted in combination with other geomorphic indicators such as normalized channel length values and trends in angle sizes changes basinward. These revisions highlight the utility of our findings while also cautioning against oversimplification.

Minor comments

5. L22, fluvial fans and deltas have distinguished before (Van Dijk et al., 2009). Perhaps specify that you are looking at quantitative differences in channel network morphometrics.

The manuscript now specifies that this study is an initial attempt to compare and distinguish deltas and fluvial fans using quantitative channel network morphometrics.

6. L144 "Deltas always form where the mouth of a river enters a body of water." This is not an essential point to the paper, but it is easy to find counterexamples to this, such as the Amazon. Perhaps change always to generally.

The sentence has been revised to clarify that deltas generally form along standing bodies of water only at places where rivers enter, accounting for cases such as the Amazon River delta.

7. L179-182 While E&S did propose this reason for channel length reduction, I do not think that it is broadly confirmed. I find that your empirical results are interesting, but that normalized channel lengths of 100s and 1000s are far too long to be explained by momentum. My point here is to just state that the proposed mechanisms have not been firmly established yet, and your certainty overstates the case.

We have reworded the text in this sentence to indicate this uncertainty. However we do not attempt to link the decrease in channel length and widths from Edmonds and Slingerland, (2007) to the trends observed in fluvial fan channel networks. This section only concerns deltas.

8. L245 remove existing.

The word "existing" has been removed from the text.

9. L262 By "not considering channels" I think you mean that you measure them but don't have them influence the channel ordering, right?

We did not include these channels in our measurements, nor did they influence channel ordering. We have replaced "consider" with "map or measure" to clarify this point.

10. L287-288 branching into three channels is sometimes called a "furcation" (Shaw et al., 2018) or a polyfurcation (Chamberlain et al., 2018).

We have incorporated these alternative terminologies, "furcation" and "polyfurcation," along with the corresponding references, into the revised manuscript.

11. L308, confusing sentence structure.

We have reworked these sentences to clearly convey the content of the database and provide clearer examples of fan termination styles.

12. L321, Python- and Pandas- readable.

We have corrected the capitalization and punctuation for these two words.

13. L451-452 this observation is consistent with Coffey and Shaw.

We have now included text describing that differences in channel reach angle measurements are also consistent with findings from Coffey and Show, (2017).

14. L459, I think "diffusion in unchannelized flow" could be improved. Perhaps, "flow patterns at channel tips well-explained by diffusive processes.

We have revised the sentence to specify that flow patterns at channel tips are well-explained by diffusive processes.

15. Our recent paper (Shaw et al., 2025) shows that many large systems have both proximal fan and distal delta platform components. Could this possibly explain why angles tend to be larger at the higher order channels at the distal end of fans?

We believe, fluvial fan and delta are defined somewhat differently in our paper as compared to Shaw et al. (2025). We define these landforms by formative processes, rather than by gradient as in Shaw et al. (2025).In our study, comparisons between gradient and mean angles (Supplementary Information) do not show any significant correlations. This may be because the overall landform gradient is not an accurate representation of the slope of fluvial fans, which have been shown to decrease in gradient downfan even when they are completely terrestrial and do not enter a basin (e.g., Chakraborty et al., 2010). Some landforms in our dataset contain fluvial fans that transition into river deltas, either close to the fan (e.g., Saskatchewan) or much further downstream (e.g., the Niger). In these cases, the fan and delta portions display significantly different mean angles (Fig. 5a and 5b). The bimodal distribution of higher order fluvial fan channels around 90° we argue is indicative of crevasse channel development, which could explain the increase of larger angles in these groups.