Responses to Review Comments

In the following, review comments are in ***blue italic*** font, while responses are in **black normal** font.

Associate Editor (Rebecca Hodge)

Thanks for submitting the revised version of your paper and for your detailed response to the reviewers. I have looked through the revised paper and have identified some places where it would benefit from some additional clarification (identified below). I would like you to address these points before the paper can be accepted for publication.

Best wishes,

Rebecca

Reply: We thank the associate editor's positive feedback and comments. Our responses to each question are listed below.

(1) Section 2.1: You provide a good explanation in the response to reviewers of why you use inflow width not confinement width to calculate unit discharge. However, I can't see where this is mentioned in the main text of the paper. (Readers might miss it if it's just in the table and figure.) I think that it would be useful to clarify this in the methods too (at around line 96 in the tracked changes version of the paper).

Reply: In Line 98 to Line 102, we added the description for the calculation of inflow unit width discharge (q) and the selection of Q_{in}/Q_s.

(2) Table 1: Is this the final bed slope? The methods say that the initial bed slope was the same in all experiments.

Reply: Yes. In Table 1, the data is final bed slope. In order to distinguish "initial bed slope" and "final bed slope" more clearly, we add a column of initial bed slope in Table 1 and move the final bed slope to the left of "critical time". Please see the modified Table 1.

(3) Section 2.3: You explain how the flow routing works, but I can't see where you explain how the model runs were carried out - e.g. what was the initial bed, what discharge was used, how many runs you did etc. Also, you should clarify that you're just modelling flow, not sediment erosion (especially as CAESAR can also model morphological change). You also need to explain that you performed some runs where you double the discharge; at the moment this just turns up in the results with no prior explanation.

Reply: In Line 192 to 198, we add a description for the conditions of our simulations. In our model, we use the experimental DEM as the initial bed condition. The simulated inflow discharge is uniformly distributed at the upstream cells based on our experimental total inflow discharge. We mention that our model only simulates the underflows, i.e., the morphological changes are excluded. Additionally, we explain the condition of double inflow discharge which is used for testing whether the linear relationship still holds between dimensionless stream power and active braiding intensity under extreme events.

(4) Are you actually using CAESAR-LISFLOOD if you aren't using the LISFLOOD flow-routing component of it?

Reply: No, we did not use CAESAR-LISFLOOD in this article. In Line 152, we state that we developed a Matlab based reduced-complexity model, with modified hydraulic conditions for density currents. The numerical scheme is based on Thomas and Nicholas (2002) and the algorithm is according to the equation (2) to equation (8) in Section 2.3.

(5) Section 3.3 and Fig 8: Why are the DoDs just shown for the final 20 min? How much bank erosion might have taken place in the previous timesteps?

Reply: In our experiments, bank erosions formed gradually as the submarine braided channels developed. The eroded volumes depend on the chosen duration. In Fig. 8, we want to present the erosion-and-deposition maps and bank erosions at the same duration for submarine braided channels at the stable phase. The duration of the last 20 min achieves this purpose, which is better than showing the DoDs every 10 min or DoDs from t = 0 to 6000 s.

(6) Fig 11: Does this show topography from the final timestep?

Reply: Yes. In Fig. 11, we use the experimental DEM at the final stage for the initial bed surface in our simulations. We add a description in the figure caption.