Thank you for giving us the opportunity to strengthen our manuscript. The following is our responses to editor's comments and detailed point-by-point response. For the "**Location in new manuscript**", we refer to the line numbers in the new manuscript (no track-changes). Also, we have addressed the comments regarding the colour scheme from the editorial support team as much as possible.

Soichi Tanabe and Toshiki Iwasaki

Location: Lines 19 and 492
Comment: Change 'across' to 'along'.
Answer: We have changed them.
Location in new manuscript: Lines 19 and 493

Location: Section 3.1
Comment: This is outlining the conditions in the model runs that you present, and so I think that this should be in the methods not the results. Your results section starts at section 3.2.
Answer: We have divided the chapter 3, and original Section 3.1 is added to Chapter 2. We have renamed Chapter 2 as "Method".
Location in new manuscript: Section 2.3 and Chapter 3

Location: Lines 263
Comment: Can you clarify that Th is the duration of a single hydrograph? How many hydrographs did you apply in each model run, i.e. what was the total duration? It would help to specify in the methods section that when you are analysing the impact of a hydrograph you are analysing the changes during the final hydrograph. This would also help to address the reviewer question about whether an initial equilibrium bed was established prior to imposing the hydrograph as it explains that the bed develops during multiple hydrographs. It would also help to clarify in figure captions that 0.5 Th (for example) refers to the final hydrograph.
Answer: We have clarified the hydrograph conditions, including the definition of Th as the duration of a single hydrograph, the total duration of 4000 h, and the number of repetitions of a single hydrograph. The caption of the relevant figures (Figs. 5-15) has been updated to specify that the data are those of the final hydrograph.
Location in new manuscript: Lines 260-262, Figs. 5-15

Location: Line 303
Comment: Not clear what you mean by 'For the equilibrium riverbed slope, we employed an average riverbed slope in the range of 3,000–18,000 m at the end of the calculation (4,000 h),' – is this the section of the model that the slope was calculated from?

Answer: A combination of flow discharge, riverbed slope, and sediment supply rate expected to produce an equilibrium state was prescribed (as described in the revised Section 2.3). However, slight slope change occurred during the simulation. Therefore, the actual equilibrium slope at the end of the calculation is used in Fig. 5. Based on this, we have clarified the corresponding description.
Location in new manuscript: Lines 301-304

Location: Fig. 6
Comment: Explain what the black lines across the riverbed show – the distance the bars migrate in that timestep? Also, as one of the reviewers asked, why do the bars not emerge until 3 km downstream, when the perturbation is at the upstream end?
Answer: We have added a description of the black lines, which show the migration distance of the bars. Alternate bars are induced by convective instability of the riverbed, in which the amplitude of perturbations grows as they are advected downstream. This growth requires a certain distance (or time) to develop (Federici and Seminara. 2003). In this study, the required development length is approximately 3 km. We have clarified the corresponding description.
Reference: Federici, B. and Seminara, G.: On the convective nature of bar instability, J. Fluid Mech., 487, 125–145, https://doi.org/10.1017/S0022112003004737, 2003.
Location in new manuscript: Fig. 6, Lines 322-324