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Earth Surface Dynamics Discussions

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Interactive comment on "Morphological evolution of bifurcations in tide-influenced deltas" *by* Arya P. Iwantoro et al.

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Dear Editor,

here I provide comments on several specific points:

1) I think the authors should take more in consideration some of the recent theoretical results.

The analytical model of Redolfi et al. (2016), which represents a fully two-dimensional extension of the Bolla Pittaluga et al. (2003, 2015) model, has been proven to effectively predict the stability of both gravel and sand bed bifurcation (Redolfi et al. 2019) with the key advantage of avoiding the calibration of a specific parameter (like the α parameter of Bolla Pittaluga el al., 2003). I think these recent advancements should be

at least mentioned in the Introduction and/or in the Discussion (Section 4.2).

Similarly, in the the work of Salter et al. (2017) which specifically focuses on the effect of downstream conditions on the bifurcation stability, should be considered in the Introduction.

Please ignore this comment if you think it is too personal (I am the main author of the above-mentioned papers).

2) Line 52: this sentence is misleading, as Bolla Pittaluga et al. (2003) did not test the effect of meandering bends. 3) Line 97: the sentence "the 2D approach also results in reliable morphodynamic simulations" is very vague, as the reliability of depth-averaged models clearly depends on the specific problem under consideration.

4) Section 4.2: it would be useful to provide an indication of the average Shields number.

5) Code availability: to enable the reproducibility of the results, I recommend the authors to share the configuration files.

6) System of coordinates: I can not see the reason for placing the bifurcation at x=220 km an y~9 km. What is the meaning of the origin (i.e. x=0, y=0) point? Setting x=0 and y=0 at the bifurcation node would have been more meaningful, and it would have facilitated the reading of the maps.

7) Units: space between value and unit is sometimes missing (e.g., line 177); please also note that units should not appear in italic (Equation 1);

8) Graphics: in several figures (e.g., Figures 7 and 11) the labels are disproportionately small; in Figure A1: the quantities represented on the two axes are "x" and "y", not "x-axis" and "y-axis.

Sincerely,

Dr. Marco Redolfi

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