Chen et al. discuss the effects of co-seismic fault displacements and a dam on the evolution of longitudinal and cross-sectional forms of three bedrock rivers in Taiwan. The multi-temporal topographic data, used in this study are unique and valuable to understand the evolution of the bedrock rivers. The content of this study matches the scope of Earth Surface Dynamics; however, I believe there are some issues to be addressed before publication. I provide the key comments below and the minor comments in the attached PDF.

Key comments:

1) Further descriptions and discussions on the combined effects of fault displacement and dam obstruction are required. Because the co-seismic knickpoint in the Dajia River disappeared due to river training in 2008, the upstream newer knickpoint and the evolution of the river following the migration of the newer knickpoint are not necessarily related to the fault activity. However, the current discussion implicitly assumes the newer knickpoint is related to fault activity. I think further explanations on how the river training in 2008 changed the channel morphology and the origin of the newer knickpoint. In addition, you have to explain Figure 13 in more detail. Although it must be the most important outcome of this study and you clearly state proposing the evolution model is the aim of this study, I do not see any descriptions on this figure.

2) It is not clear how you evaluated results of the 2-D river profile evolution. Although I am not familiar with the mathematical model in this study, the modeled river profiles do not seem to be consistent with actual river profiles. In the Daan river (fig 5), while the model predicts the river profile downstream of the knickpoint keeps its original shape during knickpoint retreat, the actual river profile changes its shape during knickpoint retreat (the knickzone stretches horizontally, and there is much less incision downstream of the knickpoint). In the Dajia River (fig 11), while the model predicts the channel slope upstream of the knickpoint is essentially the same except at the dam, the actual channel steepening occurred more extensively between the knickpoint and the dam.

3) Since the observations in the Daan river are similar to those presented in Cook et al. (2013) and Cook et al. (2014), you may want to clarify the difference between this study and previous studies or add newer implications. Although the data in 2017 is not included in Cook et al. (2014), it seems the current explanations on the Daan river are essentially the same as those in Cook et al. (2014).

Minor comments:

Line 45: What does “river pattern” mean?

Line 72-73: “abrupt slope” means “abrupt change in slope”?

Line 84: Please clarify “Historical data”.

Line 95: Please indicate the location of “the middle and upper reaches”.

Line 102: Huang et al. (2014)?

Line 104: Please clarify “Uneven uplift”.

Line 108: Please indicate when the Shigang dam was constructed.

Line 119: Please provide the resolutions and dates of the satellite images.

Line 122: Please explain more about the survey by WRA, such as survey dates, observation spacings, instruments…etc.

Line 137: Does this equation assume sediment supply from upstream is negligible or there is no deposition?

Line 145: You may want to clarify what "localized phenomena" are.

Line 160-167: This paragraph may be better placed in the Study area section because you simply summarize previous studies rather than presenting your results.

Line 172: Please indicate parameter values used in this study. The same applies to the modeling results for the Dajia River.

Line 176: I think you should clarify what C and D represent in an actual landscape. For instance, dose C correspond with the knickpoint travel speed? If so, I suggest you calculate knickpoint travel speed using the satellite images. Since the knickpoint location and the dates the images were taken are known, you can calculate the actual knickpoint travel speed and compare them with the speed predicted by the model.

Line 216: Is "erosion font" correct?

Line 221: Consider removing "topographic."

Line 238: What is "effect zone"?

Line 240: Please clarify "channelization"

Line 247: Please explain where groundsills were added.

Line 249: Please clarify "stratified erosion"

Line 255-258: This paragraph is essentially the same as in lines 235-241.

Line 263: "The base level of erosion declined downstream after uplift causing the knickpoint to move headward." I could not understand this sentence. Please reconsider the sentence.

Line 264: Is "400m" correct? I see 40m in fig9.

Line 268-269: Does "the flow path between section g and the dam became a floodplain" mean the gorge-like channel was completely filled? Based on the satellite image, it is not clear how the artificial activity changed the channel.

Line 277-278: Although you argue "The channel starting from the toe…until 2017", the channel shown in figure 9 is continuous between the dam and the fault (section f). Please rewrite the sentence or modify the figure.

Line 288-289: Although the current gap between the modeled and actual evolution of river profiles may be considered minor, as a person who are unfamiliar with the current model prediction, I feel there is a substantial difference between the model output and your observation. Please consider explaining how you evaluated the model.

Line 293: Which timeframe does "After the Chi-Chi earthquake" mean?

Line 295 "the thalweg…": Are you referring to WD ratio?

Line 304, What does "the slope replacement resulted in a natural profile" mean?

Line 312: Is "non-equilibrium state" related to topographic steady state where rates of erosion and uplift

match? How did you judge if the river reached equilibrium or not?

Line 318-319: What does “the restoration of the Daan river” mean?

Line 322: Please clarify what you meant by “topographic development… (Davis, 1899).” Presenting an abstract concept alone does not help readers to understand your argument.

Line 334: What is “potential for recovery”?