The manuscript is well organized, and the topic is attractive. In the Introduction section, the authors made a good summary of the work of their predecessors, and then put forward their own new understanding through the method of numerical simulation. The method is reliable. I read the manuscript with great interest as it is full of important knowledge in the field of drainage system evolution. However, after careful reading and consideration, I think there are two significant issues which need to be addressed before the possible publication of this manuscript.

Major concerns:

(1) Why the mean elevation increase when the hillslope diffusion increase? This is counterintuitive. In Line 134, the authors also consider it as an astonishing phenomenon. However, the authors did not present the explanation. The topographic differences affect the migration time of the knickpoints from low to high. For example, the adjustment time of river channel in Figure 5a1 is ~2 Ma, while that in Figure 5c1 is ~4 Ma, which are the conclusion of this manuscript. Moreover, from Figure 5a1 and c2, we can also see the difference in the channel slope, which is consistent with the difference in elevation. When the area and erosion coefficient remain basically unchanged, the slope differs by three times, but the erosion rate remains the same? This is not follow the rule of the stream power model ($E=KA^mS^n$). In Lines 234 and 236, the authors use the phrases of "wider divide" and "narrower divide". Therefore, a possible explanation is that the hillslope area is not included in the drainage area. However, the divide should be a curve without width. Therefore, I suggest that the authors check the setting conditions of the numerical simulation or give a reasonable explanation for this surprising phenomenon.

(2) The "transient slope change reversal" is an interesting phenomenon, and also the highlight of this manuscript. However, it is not difficult to understand that this phenomenon occurs in the numerical simulation under the set conditions. As the hillslope diffusion is not changed, the erosional difference between the river channel and the hillslope area will appear, when the rainfall changes. The erosion rate changes when the rainfall changes, while the hillslope erosion rate keeps. Then the "transient slope change reversal" phenomenon appears. Therefore, I admit that this phenomenon will occur in the numerical simulation of this study. However, in reality, the hillslope diffusion should be affected by the rainfall (Braun, 2018 GR). Therefore, Whether this phenomenon has practical significance has not been tested yet. At least the authors need to have some description on this in the Discussion section.

Other suggestions:

Figure 4: The blue profile should be 25 Ma, and the red profile should be 26 Ma.

Lines 192-199: This paragraph is exactly the same as the previous paragraph. Therefore, one of the paragraphs needs to be deleted.