

# **“Linking levee-building processes with channel avulsion: Geomorphic analysis for assessing avulsion frequency and channel reoccupation”**

**by Jeongyeon Han and Wonsuck Kim.**

We thank the associate editor and reviewer for their time and insightful feedback on this manuscript. We address all the comments raised by the reviewer: All the editorial corrections are accepted and incorporated in the revised manuscript, and other comments are listed below with our responses marked in *italic blue font*.

## **Response to Douglas Edmonds**

### **Line-by-line comments:**

L553 This is an incomplete phrase. The word "and" implies another complete thought.

We revised the sentence to avoid misunderstanding:

“In the sense that the former channels can serve as “attractors” to avulsing channels (Heller and Paola, 1996; Jerolmack and Paola, 2007; Mohrig et al., 2000; Reitz et al., 2010; Slingerland and Smith, 2004), it is common to recognize that most avulsion paths are prone to reoccupying the previously abandoned channels within the history of ancient avulsions, and in modern rivers such as the Mississippi River and Red River (Aslan et al., 2005; Edmonds et al., 2016; Hajek and Edmonds, 2014; Jerolmack and Paola, 2007).”

L581 – 582

*Rephrased the sentence based on the editorial corrections,*

“In the case of relatively steep levee slopes, the steep levees would extend to only limited distances into the floodplain, and consequently modify less of the initial local relief between the levee crests and adjacent floodplain (Fig. 8a).”

L584 hostile: not sure this is the right word choice.

*We rephrased the sentence,*

“Hence, the abandoned channel topography surrounded by the high gradient levees can be protected from the influx of flood deposits.”

L585 – 587 This could be rephrased for clarity, perhaps "The abandoned channels maintain their topographic lows because they are filled with sediment more slowly, and thus they readily capture flow and coalesce it into a new pathway."

We appreciate this suggestion to improve our manuscript. We changed the sentence based on the suggestion:

“The abandoned channels maintain their topographic lows because they are filled with overbank deposits more slowly, and thus they would readily capture the flow and coalesce it into a new pathway (Hajek and Wolinsky, 2012; Mohrig et al., 2000).”