

Interactive comment on “Multiple knickpoints in an alluvial river generated by a single instantaneous drop in base level: experimental investigation” by A. Cantelli and T. Muto

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I found the paper really interesting to read and liked the experiments - it is a neat study!

I have one question for discussion and one suggestion.

Firstly - how reproducible are the results? For example, Run 2 with several knickpoints - if this was repeated did you gain the same number of knickpoints, or similar, or quite different results. I ask, as your results imply there is some sort of scaling between the hydraulic parameters and the number of knickpoints - and reproducibility would strengthen this point. Of course they may just be random! Which would be interesting again but in a different way!

C212

Secondly, it would be nice to see some more discussion of the results - there was a good introduction providing a context of knickpoints and previous field and lab studies. But the discussion did not really explain what the significance of these results were for real or other modelled systems. Are idealised simulations like these (high froude numbers, steep slopes) really indicative of behaviours we might expect to see in the field? Hasbaargen and Paola (2000) also showed similar behaviour - but their experiments were again over quite steep slopes and with quite high 'rainfall' rates too. It would be great if you could add more to this section in any revisions.

Tom Coulthard

Interactive comment on Earth Surf. Dynam. Discuss., 1, 483, 2013.