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Comment on hess-2021-399

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Community comment on "Rill Erosion on Slope of Spoil tips: experimental study of runoff scouring erosion in multiple times" by Yongcai Lou et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-399-CC1>, 2021

It is indeed a interesting topic about soil erosion on spoil slopes that has experienced a long term study history. Rill erosion is also a old topic, and overall the core content is not so innovative. Most importantly, several of the experimental results were not reasonable.

Under a scouring test, the rill developemnt characteristics in this study are obviously different from the actual rill network development. So, this is an unrealistic study, although it shows good results expression. furthermore, the rill hydrodynamics parameters? for me the Reynold number, Frounde shear stress, and so on, they are the derived from the river dynamics, you can ensure that the rill flow is similar with river? Also, there are several rills on a slope (Fig.1), so how did the the rill hydrodynamic parameters obtained? flow velocity of each rill on a slope was measured? and then how did you analysis the data? can it represent the rill flow dynamics? This is not credible. So, the SECTION 3.3 Rill networks and morphology is not so meaningful. the rill network development was significantly affected by the flow characters at the begaining of plot top. Maybe a slight uneven of soil surface (affected by soil structure, soil moisture, mineral content.....), the flow along slope showed a completely different results although under the same flow intensity condition. So, it exhibited an extremely random result (rill developemnt). Rainfall test or natural rainfall study is a good method for understanding soil erosion mechnism of spoil slopes, because it can represent the actual process of rill developemnt on a spoil slope.