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The similarity of river evolution at the initial stage of channel erosion

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The study deals with a comparison study of two types of rocks at the initial stage of channel erosion in Taiwan. It is interesting that channel erosion at different types of rocks shows some similarity. There are two types of rocks: sandstone at Ta-an River, central Taiwan where river channel erosion from the nick point because of earthquake uplifting and mud rock at Tainan, southern Taiwan where rill erosion on a flat surface after artificial engineering. These two situations are both at the beginning stage of channel erosion, there are some similar landform appeared on channels. However the rate of erosion and magnitude of erosion are different.
According to the using of photogrammetry method to reconstruct archive imageries and field surveying by total station and 3D scanner at different stages. The incision rate is high both at the Ta-an River and the bank erosion and it is even more obvious at mud rock area because of erodibility of mud rock. The results show that bank erosion and incision both are obvious processes. Bank erosion made channel into meander. The bank erosion cause slope in a asymmetric channel profile. The incision process will start at the site where land is relatively uplifted. This paper demonstrates such similarity and landform characters.