

Earth Surf. Dynam. Discuss., author comment AC1  
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## Reply on RC1

Elena T. Bruni et al.

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Author comment on "Stochastic alluvial fan and terrace formation triggered by a high-magnitude Holocene landslide in the Klados Gorge, Crete" by Elena T. Bruni et al., Earth Surf. Dynam. Discuss., <https://doi.org/10.5194/esurf-2021-4-AC1>, 2021

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We want to thank the reviewer for this constructive feedback that will help improve the manuscript. The reviewer makes an excellent point. The climate modulation of the frequency-magnitude scalings of “extreme” weather events, the cumulative effects of which ultimately control the net ratio of water and sediment flux, might determine if the system undergoes net incision or aggradation—the latter resulting in the construction of alluvial deposits. In this case, the fundamental mechanism of valley aggregation is similar (i.e., changes in the ratio of water to sediment discharge). In the case study of the Klados catchment, the rockfall event has the impact of making the sediment discharge term more sensitive to external forcing through newly available, highly erodible landslide material. This is somewhat different from the interpretation of alluvial bodies interpreted to have been generated by a change in climate, and we agree that this is a topic that deserves discussion in the manuscript. During the revision process, we will include an expanded discussion of this excellent point and how it relates to the Klados catchment, specifically, and the island of Crete, more generally.

We also thank the reviewer for their detailed line-by-line comments. These are insightful and will be incorporated into the manuscript during the revision process.

On behalf of my co-authors,

Elena Bruni