

Referee's comments are in dark blue.

In their short communication, Walter et al. present a UAV-based semi-automatic system for the multi-temporal topographic monitoring of sediment dynamics in the source areas of a debris-flow basin. The study presents preliminary results on the erosion/deposition processes in the analyzed time period and explores the potential of the technique for investigating debris-flow hazards. The format of the short communication is suitable for this manuscript, the text is well written, and the presented system is definitely unique.

In addition to the comments of the other reviewers, on which I agree, I have few minor remarks that might be considered prior to publication. Section 5 Discussion and Conclusion sounds very optimistic for what concerns the future application of the technique in other contexts. I would suggest to briefly discuss also the potential limitations of the proposed system. For instance, I wonder to what extend the proposed technique is replicable in other locations given the installation, maintenance and data-processing costs. Regarding the assessment of debris-flow hazards in the aftermath of an event, the continuous monitoring of the unstable slope with ground-based systems (with radar, seismic but also photogrammetric sensors) is not, in general, more suitable?

Following this comment by Velio Coviello as well as the technical questions raised in the other referee comment and in the community comment, we will include more discussion on the system limitations. Some are related to power access, GPS, telemetry and other infrastructure, while others result from topography and geographical extent of the region of interest. While we agree that ground-based methods may be more appropriate in some cases, extended valleys quickly demand for satellite-based or aerial remote sensing. In this case our system offers some advantages, which we will further discuss in the revised manuscript version.