

Interactive comment on “Inferring potential landslide damming using slope stability, geomorphic constraints and run-out analysis; case study from the NW Himalaya” by Vipin Kumar et al.

Anonymous Referee #1

Received and published: 22 October 2020

I find this study is very relevant . The approach is quite good. Unstable landslides (out of 44) were identified through FEM and subsequently five landslides, those found unstable were further analysed for its blockage potential using a debris flow model. MOI and HDSI are used to evaluate potential of landslide damming. Many geotechnical parameters were estimated from field survey and laboratory analysis. This kind of investigation is quite less in literature although previously attempted by these authors for one landslide. I have some minor comments.

line 45 - Rapid Mass Movement Simulation (RAMMS) Line 102 - Do you mean KCF

C1

is a splay fault of KF? Line 120 - It is a complex sentence. Pl. modify it. Line 161 - Pl. discuss briefly the spatial variability of compressional and extensional regime here. Line 203 - whether width of dammed valley is measured at full reservoir level? Runout analysis - This analysis was performed using RAMMS. The method and parameters are fairly well discussed. I missed your explanation w.r.t. release area. Pl. describe. I think you have assumed the flow as block release. Is there any chance of Channelised flow also? Line 256 - Since you have mentioned that majority of landslides are debris slides, pl. explain how the runout analysis, which is mainly done for debris flow, is valid in your study. Line 415 - Your previous publication on Urni landslide gives a different flow height. Can you explain? Line 469 - What do you mean by strong / weak lithology. I suggest to use a technical terms here. 'therefore' is repeated. Table 1 - Have you assumed uniform thickness while estimating volume from area? How can you say that area measurement has error of 1.06% due to measurement from Google Earth image?

Interactive comment on Earth Surf. Dynam. Discuss., <https://doi.org/10.5194/esurf-2020-75>, 2020.