

Interactive comment on “Anomalous winter snow amplified earthquake induced disaster of the 2015 Langtang avalanche in Nepal” by Koji Fujita et al.

Anonymous Referee #1

Received and published: 3 November 2016

The authors present interesting data and hypothesis on the disastrous ice avalanche event triggered by the Gorkah earthquake in the Langtang valley.

However the paper mixes up facts measured by different methods (weather stations, photogrammetric DSMs, statistics) with quite bold hypothesis on the process which are not underlay sufficiently by facts and measurements. The authors have to state clearly which statements are based on facts and which statements are hypothesis or guesses. Right now these two types of statements are dangerously mixed up.

I do not agree on the hypothesis of the avalanche with only marginal contribution of glacier ice. The letter by Lacroix (2016), which is cited by the authors, clearly shows that considerable mass of up to 30 m thickness detached close to the ridge at several locations. This must be glacier ice and cannot be snow (estimated snow thickness 1.5

C1

m). So the major part of the mass had to come from glacier ice. The whole part on the triggering and the dynamics of the event is very weak. Based on the presented data no sound standing explanation of the triggering and dynamics of the event is possible. The authors should therefore delete or at least substantially reduce this part and declare it as hypothesis. As far as I know David Breashears also scoured high resolution photographs of the upper part of the area. Why are these photographs not used to generate a DSM?

Also the story about the Chees Boulder is very vague. I agree that it is very interesting but I do not think that the facts are sound enough to include it into a scientific publication.

In my opinion parts of the presented data is interesting. However in the presented form the paper is not acceptable for publication in a scientific journal and has to be carefully overworked by clearly dividing measured facts and reducing speculations not supported by sufficient measurements or observations.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., doi:10.5194/nhess-2016-317, 2016.

C2