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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Estimation of the return period of rockfalls according to the block size" *by* Valerio De Biagi et al.

Anonymous Referee #1

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The article nicely describes on how to perform a statistical analysis of rockfall samples found in the field in order to obtain a time-and-magnitude-distribution that enables a risk based analysis for the current site.

But even if the procedure provides a final distribution it still depends a lot on the quality of the field survey. The article should therefore bring a little more basics regarding the data aquisition. Which methods do exist and is a certain one recommended? What about the consideration of "modern" methods as e.g. decribed in - Mavrouli, O., Corominas, J., & Jaboyedoff, M. (2015). Size Distribution for Potentially Unstable Rock Masses and In Situ Rock Blocks Using LIDAR-Generated Digital Elevation Models. Rock Mechanics and Rock Engineering, 48(4), 1589-1604.

or more simplified methods such as - Corominas, J., Mavrouli, O., Santana, D., & Moya,

J. (2012). Simplified approach for obtaining the block volume distribution of fragmental rockfalls. Landslides and engineered slopes. Taylor and Francis, 2, 1159-1164.

the volume distributino of the rockfalls strongly depends on the block volumes found in the field. Does the method presented consider that rock blocks often burst into fragments during the rockfall process?

The formulation of a probabilistic distribution of rockfall events based on single samples is also reported in Straub, D., Schubert, M., (2008) Modeling and managing uncertainties in rockfall hazards, Georisk, Assessment and Management of Risk for Engineered Systems and Geohazards, Volume 2, Issue 1, pp. 1-15, DOI: 10.1080/17499510701835696 Maybe, the article can critically compare the method presented there and the actual procedure.

Small typo: P2L26: "e" –> "and"

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