Review of: ***From rockfall source areas identification to susceptibility zonation: a proposed workflow tested in El Hierro (Canary Islands, Spain)***

I am rejecting this paper. The study does not present any fundamentally new methodologies for rockfall hazard assessment. It relies on established techniques and applies them in a comprehensive manner. So, no significant contribution to method development other than comparison.

The motivation of the author is not clear. The paper discusses the socio-economic impacts of rockfalls, suggesting that even remote areas can have significant implications, potentially affecting future development, tourism, or local infrastructure. This analysis identifies the sources of rockfall in remote mountainous areas, where there are no populations or roads. As a result, there is no classification of which areas are vulnerable to rockfalls or how these rockfalls might affect populations and development. Identifying rockfall sources in inhabited areas or near infrastructure would be beneficial for safety and planning purposes. However, the necessity of finding rockfall sources in remote areas without development is not clearly explained, leaving the practical relevance of this study in such locations unclear.

While the paper overviews the data used for identifying rockfall source areas and modelling susceptibility, it lacks details on data acquisition and processing. Although a 5m x 5m DEM from IGN is used, the source whether satellite, LiDAR, or other is unclear. Lithological and geological data from IGME-CSIC maps lack detailed classification methods, and geomorphological data are mentioned without specifics on acquisition or use. Historical rockfall events and field observations are referenced for validation, but collection and validation methods are not detailed. The author could add more information.

The paper does not seem to employ a conditional probability framework that explicitly models how a rockfall event influences the probability of subsequent events.

One limitation of the paper is that it does not thoroughly describe the relevance of rockfall trajectories.

Although the study compares different methods, it does not provide a detailed evaluation of why specific factors or combinations of factors lead to better performance.

The paper discusses the results of the different methods used for rockfall susceptibility assessment, identifying which method provides the best results. However, it does not delve into the reasons behind why one method outperforms the others. This lack of analysis of the factors contributing to the best results limits the understanding of the strengths and weaknesses of each approach. Without a clear explanation of why a particular method is more effective, it is difficult to apply these findings in other contexts or to make informed decisions about method selection in future studies.

The slope thresholding approach does not consider other important factors like vegetation or soil type, which can also affect rockfall susceptibility. Although the choice of slope threshold is informed by previous studies and local conditions, focusing primarily on slope and lithology, it can still be somewhat arbitrary. Without proper validation, this method may not accurately identify all rockfall-prone areas, potentially leading to inaccuracies. The methods and findings are specific to the geological and topographical context of El Hierro, a volcanic island, and do not offer clear guidance on adapting these methods to other regions, limiting their generalizability.