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SOME REMARKS ON THE ROCKFALL STABILITY ANALYSIS

Summary:

The aim of this paper is to discuss some aspects of the rockfall stability analysis, highlighting the difficulties in facing this widespread natural phenomenon. Rockfall often threatens roads, viaducts, buildings and many other structures and infrastructures, as well as people, causing serious damages, losses and injuries because of its high energy content. The complexity of this phenomenon is mainly due to its aleatory characteristic and a notable epistemic uncertainty on the parameters involved. Many contributions are available in literature on this natural hazard, but the research is still going on trying to define objective and quantitative methodologies for rockfall risk assessment.

In particular, some remarks on three of the most critical aspects of rockfall analysis at the local scale (slope scale) are reported, based on the author's experience. The importance of taking into account the vegetation in the runout simulations and the methods to do it are shown. Then, a methodology to estimate the characteristic (design) rock block to be used in forward-looking simulations and for defence works design is recalled. The paper ends with some observations on the buildings vulnerability estimation.

Key words:

Rockfall, rockfall runout analysis, design rock block, buildings vulnerability

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