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Modeling of the Effect of Explosives, Geological and Geotechnical Parameters on the Stability of Rock Masses Case of Marrakech: Agadir Highway, Morocco

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Abstract : During the earthworks for the construction of Marrakech-Agadir highway in southern Morocco, which crosses mountainous areas of the High Western Atlas, the main problem faced is the stability of the slopes. Indeed, the use of explosives as a means of excavation associated with the geological structure of the terrain encountered can trigger major ruptures and cause damage which depends on the intrinsic characteristics of the rock mass. The study consists of a geological and geotechnical analysis of several unstable zones located along the route, mobilizing millions of cubic meters of rock, with deduction of the parameters influencing slope stability. From this analysis, a predictive model for rock mass stability is carried out, based on a statistic method of logistic regression, in order to predict the geomechanical behavior of the rock slopes constrained by earthworks.

Keywords : explosive, logistic regression, rock mass, slope stability
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