



## **Search for sliding surface of slope based on Dynamic Strength Reduction Method**

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Slope failure is a very common disaster in hilly regions, especially sliding disasters of heterogeneous rocky slope. The failure of slope is a progressive process where the whole sliding surface gradually evolves from the local damaged region in the slope. Based on the yield weakening of geotechnical material, a new sliding surface search method that can simulate the progressive failure of slope was proposed. The strength parameter of the damaged region was reduced, and then mechanical equilibrium of slope was calculated. Through the continuous local damage reduction of the strength parameters of the damaged slope body, the potential sliding surface damaged gradually and evolved to breakthrough finally.

The weak layer is closely associated with the stability of the heterogeneous rocky slope, but traditional calculation method is difficult to determine the failure mode. Present article mainly deals with the analysis of the stability of Dagangshan Mountain slope of Sichuan Province in China. The prevention flow of sliding disaster for heterogeneous rocky slope is presented. At first, Dynamic Strength Reduction Method (DSRM) was used to search the sliding surface, failure position and sliding direction. The case study of Dagangshan Mountain slope shows that DSRM is reasonable and correct when it is compared with the field observations. The study indicates that the sliding disaster of the slope is connected with f231 fault. The calculation results provide theoretical basis for the support and reinforcement program. In conclusion, DSRM provides a new calculation method for the stability and disaster forecast of similar heterogeneous rocky slopes.