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基于人工降雨实验的坡面泥石流启动力学计算(PDF)

Title: Mechanical model of slope debris flow initiation based on artificial rainfall experiment

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摘要: 运用条分法对人工降雨试验后坡面启动的泥石流土体进行了稳定性验算,得到的安全系数大于1,不符合坡面泥石流启动时所处的实际力学状态。通过能量守恒原理和动量定理对土体的内摩擦系数以及影响泥石流启动的渗透力建立了新的计算方法,并计算了坡体稳定系数,更好地反映了坡面泥石流在降雨作用下所处的实际力学状态,为坡面泥石流的稳定性评价和预测预报提供了可以借鉴的方法。

Abstract: Spencert slicing method was first used to study stability of soil body of slope debris flow under concentrated artificial rainfall in this paper. However, the safety factor obtained is greater than 1, not conform to the actual situation. Then, a new mechanical model was established through the energy conservation

principle and momentum theorem to calculate the internal friction coefficient of soil body, the permeability force influencing the initiation of debris flow, and the slope stability coefficient. Results from this method reflect the actual mechanics state of the slope debris flow under the action of rainfall better and provide a reference to stability evaluation and prediction and forecast method of the slope debris flow.

参考文献/REFERENCES

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