

Physical Model Test of Debris Landslide Reinforcement with Single Row Micro-pile

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Abstract: Micro-piles are widely used because of its own advantages, but relatively few theoretical studies about its anti-slide mechanism. Firstly, the mechanical properties of the model pile into calibration tests, to get of elasto-plastic session elastic modulus, were 0.69×10^4 MPa and 0.04×10^4 MPa. Through the different pile spacing under a single row of miniature pile reinforcement gravel soil landslide indoor model experiment to study the micro-piles against sliding mechanism. The test results show that: different pile spacing, single row of micro-pile soil pressure mainly concentrated in the range of slip surface more than 1/3 of the pile. The pile spacing is small, soil arching effect, the greater the micro pile skid failure critical moment, the micro pile can withstand landslide thrust the greater skid the better.

Key words: Micro-pile; Gravel soil landslide; Landslide thrust; Soil arching; Critical moment

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门源县属青海海北藏族自治州,地处祁连山脉腹地黄河支流大通河(又称浩门河)上游河谷地带,距离省府西宁约156 km,县城所在地浩门镇。全县平均海拔约2 800 m,全县共有15万人左右,22个民族共存,其中44.7%是回族。因此,门源县全称是门源回族自治县。门源有着青海最大的油菜花基地,是西北地区的主要油料产区之一。每年的7月是油菜花盛开的季节,西起青石嘴、东到玉隆滩、北到与甘肃交界的冷龙岭、南到大坂山,油菜花绵延几十公里,整个门源顿时变成了一片金色的海洋。门源的油菜花田大多向着浩门河谷的方向倾斜,两边是金灿灿的油菜花海,中间浩门河像一条玉带在花海流淌,在蓝天白云雪山的映衬下,气势恢弘,凸显出那股铺天盖地的霸气。门源油菜花号称有近3.4万公顷,蔚为壮观,和南方小片小片油菜地不是一个概念,和贵州兴义的大片油菜花也不同。每当天气晴朗的时候,蓝天、白云、雪山、花海,壮美的景色令人叹为观止(拍摄地点:青海省海北藏族蒙古族自治州门源县,海拔2 851 m)。

(蓝永超)