

降雨前复合土钉支护填土边壁(坡)相似模型试验研究

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摘要 在给出降雨前复合土钉支护填土边壁(坡)相似法则基础上, 论述了大型相似模型试验的条件、方法、结果和结论。研究指出, 复合土钉支护具有显著减小填土边壁(坡)位移性能。同无支护条件相比, 前者最大垂直位移和位移速率, 以及最大水平位移和位移速率, 分别为后者的0.005和0.021倍; 前者的水平锚管应变峰值点连线、观测线显著位移点连线, 与后者的最终滑塌面(线)三者, 其分布形态和位置均很相近, 说明“加固后滑塌线后退”的说法不成立; 水平支护锚管里端部应变均非零值点, 这是复合土钉支护锚固作用存在性的证明。

关键词 [土力学](#); [复合土钉支护](#); [填土边壁\(坡\)](#); [相似模型](#); [试验研究](#)

分类号

SIMILARITY MODEL TEST STUDY ON COMPOSITE SOIL-NAILED SUPPORTING FILLED SIDEWALL(SLOPE) BEFORE RAINFALL

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Abstract

Based on the established similarity law of composite soil-nailed supporting filled sidewall (slope) before rainfall, the conditions, methods, results and conclusions of large-scale similarity model test are discussed. The study shows that the technique of composite soil-nailed supporting can reduce the displacement of filled sidewall (slope) remarkably. The vertical displacement and displacement rate of the filled sidewall(slope) supported with composite soil-nailed are 0.005 times of those of the filled sidewall(slope) without supporting. The horizontal displacement and displacement rate of the former are 0.021 times of those of the latter. The peak strain line of horizontal anchor-pipes and the remarkable displacement line of the observation lines of the former are close to the final slump section(line) of the latter. Their distribution shape and position are very close. The result shows that the standpoint that the slump line will stand back after reinforcement is not correct. The strain of the inner ends of all horizontal anchor-pipe is not zero. This has testified the presence of the reinforcement effect on composite soil-nailed support.

Key words [soil mechanics](#); [composite soil-nailed support](#); [filled side wall\(slope\)](#); [similarity model](#); [test study](#)

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