

# 承压水对平推式滑坡的作用分析

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## INFLUENCE OF CONFINED WATER ON TRANSLATIONAL LANDSLIDE

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摘要

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摘要 基于地质调查分析, 探讨承压水对平推式滑坡稳定性的影响方式。结合下山滑坡的地质环境条件, 构建典型平推式滑坡地下水渗流分析模型, 提出通过计算承压水作用范围, 使边坡稳定计算结果更合理。根据承压水一维稳定渗流理论, 推导出承压水作用范围的计算公式; 同时计算分析承压水作用范围各影响因素的敏感性。计算结果表明, 在一定范围内各影响因素有如下规律: (1) 承压水作用范围随着渗透系数增大而线性减小; (2) 承压水作用范围随渗流量增大而线性增大; (3) 承压水作用范围和透水层厚度呈抛物线关系, 且随着透水层厚度的增加呈加速趋势减小。最后分析了承压水作用范围大小对滑坡稳定系数的影响规律, 结果表明滑坡稳定性系数随着承压水作用范围增大而线性减小。

关键词: [边坡工程](#) [平推式滑坡](#) [承压水](#) [渗流](#) [敏感性分析](#) [边坡稳定性](#)

Abstract: Based on geological survey, influence of confined water on stability of translational landslide is discussed. Combining with geological environmental condition of Xiashan landslide, the typical groundwater seepage model of translational landslide is established; and the result of slope stability calculation becomes more reasonable considering action range of confined water. Based on one-dimensional steady seepage theory, calculation formula of action range caused by confined water is deduced; and then parameter sensitivity of this formula is analyzed. The calculation results show that action range of confined water follows established law within a certain range of each parameter: (1) Action range of confined water decreases linearly with the increase of permeability coefficient. (2) Action range of confined water increases linearly with seepage discharge. (3) Action range of confined water takes on parabola shape with thickness of permeable layer, and it is accelerated decreasing trend with the increase of permeable layer thickness. Calculation results also show that the stability coefficients of landslide decreases linearly with the increase of action range of confined water.

Keywords: [slope engineering](#) [translational landslide](#) [confined water](#) [seepage](#) [sensitivity analysis](#) [slope stability](#)

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