

非饱和非稳定渗流作用下土坡稳定分析的强度折减有限元方法

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摘要 从固、液相质量守恒的角度讨论非饱和非稳定渗流的基本方程, 采用强度折减有限元方法且结合非饱和非稳定渗流有限元程序分析水位骤降引起的土坡稳定性, 并与极限平衡法结果进行对比分析。研究表明, 强度折减有限元方法是分析非饱和非稳定渗流作用下土坡稳定性的一种比较有效的方法, 为工程实践提供参考依据, 同时也指出今后的研究方向。

关键词 [边坡工程](#); [非饱和土](#); [非稳定渗流](#); [土坡稳定](#); [强度折减有限元方法](#)

分类号

STRENGTH REDUCTION FEM IN STABILITY ANALYSIS OF SOIL SLOPES SUBJECTED TO TRANSIENT UNSATURATED SEEPAGE

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Abstract

The basic equation for unsaturated transient seepage is discussed from consideration of mass conservation of solid and liquid phases, the stability of soil slope due to drawdown of water level is analyzed by the strength reduction FEM combined with transient unsaturated seepage calculation; the results are compared with the results of limit equilibrium approach. The comparison shows the validity of the strength reduction FEM to evaluate the stability of slopes subjected to transient unsaturated seepage; the conclusions provide references to the engineering practice. Topics for the further research in this area are also suggested.

Key words [slope engineering](#); [unsaturated soils](#); [transient unsaturated seepage](#); [slope stability](#); [strength reduction finite element method \(SRFEM\)](#)

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