

Web of Science®

[<< Back to results list](#)

Record 1 of 2

Record from Web of Science®

Limit analysis of submerged slopes subjected to water drawdown

[Print](#) | [E-mail](#) | [Add to Marked List](#) | [Save to EndNote® Web](#)
[Save to EndNote®, RefMan, ProCite](#) [more options](#)

Author(s): Viratjandr C (Viratjandr, Chardphoom), Michalowski RL (Michalowski, Radoslaw L.)

Source: CANADIAN GEOTECHNICAL JOURNAL **Volume:** 43 **Issue:** 8 **Pages:** 802-814 **Published:** AUG 2006

Times Cited: 4 **References:** 13 [Citation Map](#)

Abstract: A rapid draw of water from a reservoir can cause a temporary increase in the hydraulic gradient that may not be tolerated by the slope of an earth dam. The increased seepage forces may lead to slope instability, causing the collapse of the structure. The kinematic approach of limit analysis is used to examine stability of slopes subjected to a rapid or slow drawdown. Combinations of slope inclination, soil properties, and hydraulic conditions are found for which the slope becomes unstable. The results are presented in the form of charts for convenient practical use, and the safety factors can be obtained from the charts without the need for iteration. For granular slopes, particularly if shallow, subjected to drawdown, a simple translational mechanism with a shallow failure surface is not the most adverse mechanism for all water-draw regimes.

Document Type: Article

Language: English

Author Keywords: slopes; stability; rapid drawdown; limit state analysis

KeyWords Plus: STABILITY

Reprint Address: Michalowski, RL (reprint author), Univ Michigan, Dept Civil & Environm Engr, 2340 GG Brown Bldg, 2350 Hayward, Ann Arbor, MI 48109 USA

Addresses:

1. Univ Michigan, Dept Civil & Environm Engr, Ann Arbor, MI 48109 USA

E-mail Addresses: rlmich@umich.edu

Publisher: NATL RESEARCH COUNCIL CANADA-N R C RESEARCH PRESS, BUILDING M 55, OTTAWA, ON K1A 0R6, CANADA

Subject Category: Engineering, Geological; Geosciences, Multidisciplinary

Cited by: 4

This article has been cited 4 times (from Web of Science).

Penalba RF, Luo Z, Juang CH [Framework for probabilistic assessment of landslide: a case study of El Berrinche](#) ENVIRONMENTAL EARTH SCIENCES 59 3 489-499 DEC 2009

Michalowski RL [Expanding collapse in partially submerged granular soil slopes](#) CANADIAN GEOTECHNICAL JOURNAL 46 12 1371-1378 DEC 2009

Li AJ, Merifield RS, Lyamin AV [Limit analysis solutions for three dimensional undrained slopes](#) COMPUTERS AND GEOTECHNICS 36 8 1330-1351 OCT 2009

[[view all 4 citing articles](#)]

[Create Citation Alert](#)

Related Records:

Find similar records based on shared references (from Web of Science).

[[view related records](#)]

References: 13

View the bibliography of this record (from Web of Science).

Suggest a correction

If you would like to improve the quality of this product by

IDS Number: 072EB

ISSN: 0008-3674

DOI: 10.1139/T06-042



<< [Back to results list](#)

◀ Record 1 of 2 ▶

Record from **Web of Science®**

Output Record

Step 1:

- Authors, Title, Source
- plus Abstract
- Full Record
- plus Cited Reference

Step 2: [\[How do I export to bibliographic management software?\]](#)

View in [简体中文](#) [English](#) [日本語](#)

Please give us your [feedback](#) on using ISI Web of Knowledge.

[Acceptable Use Policy](#)
Copyright © 2010 Thomson Reuters



THOMSON REUTERS

Published by Thomson Reuters