# CONTENTS

Railroad Ballast Load Ranking Classification	
by Gerald P. Raymond and Vishnu A. Diyaljee	33
Extreme-Value Problems of Limiting Equilibrium	
by Michael Garber and Rafael Baker	55
Probabilistic Evaluation of Penetration Resistances	
by Wilson H. Tang	73
Interparticle Action and Rheology of Dispersive Clays	
by Raymond N. Yong, Amar J. Sethi, Harald P. Ludwig,	
and Mary A. Jorgensen 11	93
Dynamics of Vibratory-Roller Compaction	
by Tai-Sung Yoo and Ernest T. Selig	11
Static Shear and Liquefaction Potential	
by Yoginder P. Vaid and W. D. Liam Finn	.33

## **TECHNICAL NOTES**

Proc. Paper 14872

Estimated Magnitude of Acoustic Emissions in Soil												
by Arthur E. Lord, Jr. and Robert M. Koerner.	·	•	•	•	•	•	•	•	•	·	 124	9

iii

This Journal is published monthly by the American Society of Civil Engineers. Publications office is at 345 East 47th Street, New York, N.Y. 10017. Address all ASCE correspondence to the Editorial and General Offices at 345 East 47th Street, New York, N.Y. 10017. Allow six weeks for change of address to become effective. Subscription price to members is \$12.00. Nonmember subscriptions available; prices obtainable on request. Second-class postage paid at New York, N.Y. and at additional mailing offices. GT, HY.

The Society is not responsible for any statement made or opinion expressed in its publications.

#### DISCUSSION

# Proc. Paper 14867

<b>Cross-Hole and Down-Hole</b> $V_s$ by Mechanical Impulse, <sup>a</sup> by Bruce Auld (Dec., 1977. Prior Discussion: Jan., 1979).
by Kenneth H. Stokoe, II, Richard J. Hoar,
and Robert F. Ballard, Jr
<b>Definition of Terms Related to Liquefaction,</b> <sup>*</sup> by the Committee on Soil Dynamics of the Geotechnical Engineering Division (Sept., 1978.
Prior Discussions: May, 1979).
by Robert Pyke
Temporary Tunnel Support by Artificial Ground Freezing, <sup>a</sup> by John
S. Jones and Ralph E. Brown (Oct., 1978).
by Chandra S. Brahma
Downdrag on Bitumen Coated Piles, <sup>a</sup> by Mohsen M. Baligh, Vitoon
Vivatrat, and Heinrich Figi (Nov., 1978).
by Bengt H. Fellenius
Effects of Stress History on Deformation of Sand," by James R.
Lambrechts and Gerald A. Leonards (Nov., 1978).
by Chandra S. Brahma
Nonlinear Behavior of Soft Clays during Cyclic Loading, <sup>a</sup> by Izzat
M. Idriss, Ricardo Dobry, and Ram D. Singh (Dec., 1978).
by Adel S. Saada, Louise P. Shook, and Gary F. Bianchini 1268

## INFORMATION RETRIEVAL

The key words, abstract, and reference "cards" for each article in this Journal represent part of the ASCE participation in the EJC information retrieval plan. The retrieval data are placed herein so that each can be cut out, placed on a  $3 \times 5$  card and given an accession number for the user's file. The accession number is then entered on key word cards so that the user can subsequently match key words to choose the articles he wishes. Details of this program were given in an August, 1962 article in CIVIL ENGINEERING, reprints of which are available on request to ASCE headquarters.

<sup>\*</sup>Discussion period closed for this paper. Any other discussion received during this discussion period will be published in subsequent Journals.