

PIERO SEMBENELLI
MILANO

VOL.99 NO.SM12. DEC. 1973

**JOURNAL
OF THE
SOIL MECHANICS
AND FOUNDATIONS
DIVISION**

PROCEEDINGS OF
THE AMERICAN SOCIETY
OF CIVIL ENGINEERS



AMERICAN SOCIETY OF CIVIL ENGINEERS

BOARD OF DIRECTION

President

Charles W. Yoder

President-elect

William M. Sangster

Past President

John E. Rinne

Vice Presidents

William R. Gibbs

Dean F. Peterson

Ivan M. Viest

L. A. Woodman

Directors

William C. Ackerman

Amos J. Alter

B. Austin Barry

Robert D. Bay

Walter E. Blessey

Bevan W. Brown, Jr.

Archie N. Carter

Clarence W. E. Davies

Lyman R. Gillis

Albert A. Grant

Paul C. Hassler, Jr.

Hugh W. Hempel

Elmer B. Isaak

Russel C. Jones

Thomas C. Kavanagh

Oscar T. Lyon, Jr.

John E. McCall

Jack McMinn

Irvan F. Mendenhall

Cranston R. Rogers

Christopher G. Tyson

EXECUTIVE OFFICERS

Eugene Zwayer, *Executive Director*

Don P. Reynolds, *Assistant Executive Director*

Joseph McCabe, *Director—Education Services*

Edmund H. Lang, *Director—Professional Services*

Paul A. Parisi, *Director—Publication Services*

Albert W. Turchick, *Director—Technical Services*

William D. French, *Director—Support and Administrative Services*

William N. Carey, *Secretary Emeritus*

William H. Wisely, *Executive Director Emeritus*

William S. LaLonde, Jr., *Treasurer*

Elmer K. Timby, *Assistant Treasurer*

COMMITTEE ON PUBLICATIONS

Walter E. Blessey, *Chairman*

Jack H. McMinn, *Vice Chairman*

Bevan W. Brown, Jr., Clarence W. E. Davies

Archie N. Carter, John E. McCall

SOIL MECHANICS AND FOUNDATIONS DIVISION

Executive Committee

Roy E. Olson, *Chairman*

George F. Sowers, *Vice Chairman*

Joseph M. DeSalvo

John Lysmer

Kenneth L. Lee, *Secretary*

Jack W. Hilf, *Management Group E Contact Member*

Publications Committee

E. T. Selig, *Chairman*

G. B. Clark

D. J. D'Appolonia

C. M. Duke

James M. Duncan

R. D. Ellison

H. L. Gill

D. H. Gray

D. J. Hagerty

Kaare Hoeg

H. M. Horn

J. R. Hall, Jr.

Izzat M. Idriss

H. Y. Ko

R. J. Krizek

C. C. Ladd

K. L. Lee, *Exec. Comm. Contact Member*

L. J. Langfelder

T. K. Liu

Ulrich Luscher

Gholamreza Mesri

Victor Milligan

N. Morgenstern

Donald J. Murphy

Iraj Noorany

P. C. Rizzo

W. G. Shockley

D. H. Shields

C. V. Girija Vallabhan

A. S. Vesic

R. J. Woodward, Jr.

S. G. Wright

T. H. Wu

PUBLICATION SERVICES DEPARTMENT

Paul A. Parisi, *Director*

Technical Publications

Richard R. Torrens, *Editor*

Robert D. Walker, *Associate Editor*

Geraldine Cioffi, *Assistant Editor*

Virginia Anne Fechtmann, *Editorial Assistant*

Melinda S. Charles, *Editorial Assistant*

Mary Fader, *Editorial Assistant*

Frank J. Loeffler, *Draftsman*

Information Services

Irving Amron, *Editor*

DIVISION NAME CHANGE

The Technical Activities Committee, at its July 9-10, 1973 meeting, held in Tulsa, Oklahoma, approved the change in name of the Soil Mechanics and Foundations Division to the Geotechnical Engineering Division. However, we are continuing to use the "old" name for the Journals for the balance of 1973. The January 1974 issue will carry the new name.

CONTENTS

Passive Pressure Coefficients by Method of Slices <i>by Donald H. Shields and A. Zeki Tolunay</i>	1043
Vibratory In Situ and Laboratory Soil Moduli Compared <i>by Robert W. Cunny and Zelma B. Fry</i>	1055
Membrane Encapsulated Soil Layers <i>by James P. Sale, Frazier Parker, and Walter R. Barker</i>	1077
Strain-Stress Relations and Failure of Anisotropic Clays <i>by Adel S. Saada and Chin-Der Ou</i>	1091
Electrical Dispersion in Relation to Soil Structure <i>by Kandiah Arulanandan and Scott S. Smith</i>	1113
Tieback Wall Construction—Results and Controls <i>by Kenneth R. Ware, Melvin Mirsky, and William E. Leuniz</i>	1135
Earth Pressures on Structures Due to Fault Movement <i>by James M. Duncan and Guy Lefebvre</i>	1153

→

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 \$8.00. Nonmember subscriptions available; prices obtainable on request. Second-class postage paid at New York, N.Y. and at additional mailing offices. HY, SM.

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

DISCUSSION

Proc. Paper 10184

- Finite Element Analysis of Strain-Softening Clay**, by Kaare Höeg (Jan., 1972. Prior Discussion: Sept., 1972).
closure 1167
- Soil Resistance Predictions from Pile Dynamics**, by Frank Rausche, Fred Moses, and George G. Goble (Sept., 1972. Prior Discussion: May, 1973).
closure 1169
- Constructional Deformations in Rockfill Dam,**^a by Arthur Penman and Andrew Charles (Feb., 1973. Prior Discussion: Aug., 1973).
by David J. Naylor and D. Barrie Jones 1170
- Model Investigations of Pile Groups in Sand,**^a by Andrzej F. Tejchman (Feb., 1973).
by Kalankamary P. George 1172
- Engineering Computer Program Documentation Standards,**^a by the Subcommittee on Program Documentation of the Committee on Computer Applications of the Soil Mechanics and Foundations Division (Mar., 1973).
by John D. Rouse, Anatole Longinow, and Richard L. Chiapetta 1174
- Effect of Seepage Stream on Artificial Soil Freezing,**^a by Hadi T. Hashemi and Cedomir M. Sliepcevich (Mar., 1973).
by Stuart W. Churchill 1175

TECHNICAL NOTES

Proc. Paper 10189

- Drained Liquefaction Testing in Simple Shear**
by Dennison J. Pickering 1179
- Effect of Sampling on Compressibility of Soft Clay**
by Iraj Noorany and Iraj Poormand 1184

^aDiscussion period closed for this paper. Any other discussion received during this discussion period will be published in subsequent Journals.