

PERMISSION TO PHOTOCOPY JOURNAL PAPERS

Permission to photocopy for personal or internal reference beyond the limits in Sections 107 and 108 of the U.S. Copyright Law is granted by the American Society of Civil Engineers for libraries and other users registered with the Copyright Clearance Center, 21 Congress Street, Salem, Mass. 01970, provided the appropriate fee is paid to the CCC for all articles bearing the CCC code. Requests for special permission or bulk copying should be addressed to the Manager of Technical and Professional Publications, American Society of Civil Engineers.

CONTENTS

**Shear Lag in Box Girders**  
*by Bogdan O. Kuzmanović and H. James Graham . . . . .* 1701

**Seismic Damage in Reinforced Concrete Frames**  
*by Hooshang Banon, John M. Biggs, and H. Max Irvine . . . . .* 1713

**Collapse by Ponding of Air-Supported Spherical Caps**  
*by David J. Malcolm and Peter G. Glockner . . . . .* 1731

**Optimization Procedure for Pulse-Simulated Response**  
*by Sami F. Masri and Frederick B. Safford . . . . .* 1743

**Approximate Design by Geometric Series**  
*by Bogdan O. Kuzmanović and Nicholas Willems . . . . .* 1763

**An Evaluation of Inelastic Seismic Design Spectra**  
*by Stephen A. Mahin and Vitelmo Bertero . . . . .* 1777

**Cellular and Voided Slab Bridges**  
*by Baidar Bakht, Leslie G. Jaeger, and Mo S. Cheung . . . . .* 1797

The Journal of the Structural Division (ISSN 0044-8001) 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 \$22.50. Nonmember subscriptions available; prices obtainable on request. Second-class postage paid at New York, N.Y. and at additional mailing offices. ST.

POSTMASTER: Send address changes to American Society of Civil Engineers, 345 East 47th Street, New York, NY 10017.

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

<b>Static Behavior of Beam-to-Column Moment Connections</b> by <i>W. F. Chen and K. V. Patel</i> . . . . .	1815
<b>Limit Design of Slabs for Concentrated Loads</b> by <i>Hans Gesund</i> . . . . .	1839
<b>Steel Struts under Severe Cyclic Loadings</b> by <i>Egor P. Popov and R. Gary Black</i> . . . . .	1857

---

DISCUSSION

Proc. Paper 16481

---

<b>Stability of Flexibility Connected Plate Systems</b> , by Milija Pavlovic, Donald S. Mansell, and Leonard K. Stevens (Oct., 1980). <i>errata</i> . . . . .	1885
<b>Research Needs in Stability of Metal Structures,*</b> by Reidar Bjorhovde (Dec., 1980). by <i>Charles E. Massonnet and Rene Maquoi</i> . . . . . by <i>Roman Wolchuk</i> . . . . .	1885 1889
<b>Membrane Reinforcement in Shells,*</b> by Ajaya K. Gupta (Jan., 1981). by <i>Morris N. Fialkow</i> . . . . .	1890

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 × 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.

---

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