

# CONTENTS

Papers	Page
TRACER TESTS OF EDDY DIFFUSION IN FIELD AND MODEL by Maurice J. Crickmore . . . . .	1737
SUPERCRITICAL FLOW OVER SILLS AT INCIPIENT JUMP CONDITIONS by Karam S. Karki, Subhash Chander, and Ramesh C. Malhotra . . . . .	1753
KINEMATIC WAVE NOMOGRAPH FOR TIMES OF CONCENTRATION by Robert M. Ragan and J. Obiukwu Duru . . . . .	1765
FLOODS PREDICTED FROM RAINFALL FREQUENCIES by Lee Robinson and Theodore T. Williams . . . . .	1773
UNIVERSITY OF CINCINNATI URBAN RUNOFF MODEL by Constantine Papadakis and Herbert C. Preul . . . . .	1789
UNIT STREAM POWER AND SEDIMENT TRANSPORT by Chih Ted Yang . . . . .	1805
MULTIRESERVOIR OPTIMIZATION MODEL by James S. Windsor and Ven Te Chow . . . . .	1827
NUMERICAL COMPUTATION OF STRATIFIED NEARLY HORIZONTAL FLOWS by John P. Gurbert and Michael B. Abbott . . . . .	1847

(over)

---

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 is \$16.00 per year with discounts to members and libraries. Second-class postage paid at New York, N.Y. and at additional mailing offices. HY.

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

## DISCUSSION

Proc. Paper 9222

<hr/>	
DISCUSSION	
Proc. Paper 9222	
<hr/>	
SEDIMENT TRANSPORTATION MECHANICS: H. SEDIMENT DISCHARGE FORMULAS, by the Task Committee for Preparation of Sedimentation Manual of the Committee on Sedimentation of the Hydraulics Division (Apr., 1971. Prior Discussions: Sept., 1971, Jan., Feb., 1972). closure . . . . .	1869
BED LOAD TRANSPORTATION IN ALLUVIAL CHANNELS, <sup>a</sup> by Satya P. Garg, A. K. Agrawal, and Prem Raj Singh (May, 1971. Prior Discussion: Jan., 1972). by S. N. Sarkar . . . . .	1872
GENERAL HYDROLOGIC SYSTEM MODEL, by Ven Te Chow and V. C. Kulandaiswamy (June, 1971. Prior Discussion: Mar., 1972). closure . . . . .	1873
FLOW OVER TRIANGULAR ELEMENTS SIMULATING DUNES, by Mahmoud Faisal Rifai and Kenneth V. H. Smith (July, 1971. Prior Discussion: Mar., 1972). closure . . . . .	1874
UNSTEADY FREE SURFACE GROUND WATER SEEPAGE, by Rameshwar D. Verma and Wilfried Brutsaert (Aug., 1971. Prior Discussion: Mar., 1972). closure . . . . .	1875
CAVITATION IN HORIZONTAL PIPELINES DUE TO WATER HAMMER, <sup>a</sup> by J. P. Th. Kalkwijk and C. Kranenburg (Oct., 1971. Prior Discussion: Sept., 1972). by T. K. Ramakrishnan . . . . .	1876
MANIFOLD FLOW IN SUBIRRIGATION PIPES, by Edwin Zsák (Oct., 1971. Prior Discussions: Apr., 1972). errata . . . . .	1878
NEW APPROACH TO HYDROLOGIC DATA ACQUISITION, <sup>a</sup> by Edward J. Langham (Dec., 1971. Prior Discussion: Sept., 1972). by Morley J. Goodspeed . . . . .	1879
SEDIMENT TRANSPORTATION MECHANICS: FUNDAMENTALS OF SEDIMENT TRANSPORTATION, <sup>a</sup> by the Task Committee for Preparation of Sedimentation Manual of the Committee on Sedimentation of the Hydraulics Division (Dec., 1971). by Mohammad Akram Gill . . . . .	1880

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

	Page
DRAG FORCES ON BAFFLE BLOCKS IN HYDRAULIC JUMPS, <sup>a</sup> by David R. Basco and John R. Adams (Dec., 1971). by Hari Ram Sharma . . . . .	1884
TWO-DISTRIBUTION METHOD FOR FLOOD-FREQUENCY ANALYSIS, <sup>a</sup> by Krishan P. Singh and Robert A. Sinclair (Jan., 1972. Prior Discussion: Sept., 1972). by Richard H. Hawkins . . . . .	1885
EINSTEIN BED-LOAD FUNCTION AT HIGH SEDIMENT RATES, <sup>a</sup> by Hans Albert Einstein and Farouk M. Abdel-Aal (Jan., 1972). by Mohammad Akram Gill . . . . .	1888
COMPUTER ANALYSIS OF WATER DISTRIBUTION SYSTEMS: PART I—FORMULATION OF EQUATIONS, <sup>a</sup> by Chan F. Lam and M. L. Wolla (Feb., 1972). by Frederick L. Hotes . . . . .	1889
COMPUTER ANALYSIS OF WATER DISTRIBUTION SYSTEMS: PART I—FORMULATION OF EQUATIONS, AND COMPUTER ANALYSIS OF WATER DISTRIBUTION SYSTEMS: PART II—NUMERICAL SOLUTION, <sup>a</sup> by Chan F. Lam and M. L. Wolla (Feb., 1972 and Mar., 1972). by Ralf G. Cembrowicz and Joseph J. Harrington . . . . .	1890
TECHNOLOGICAL INNOVATION AND HYDRAULIC ENGINEERING, <sup>a</sup> by George Bugliarello (May, 1972). by Gordon R. Williams . . . . .	1892

---

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