SENIOR STAFF POSITION FOR PhD MATHEMATICIAN

THE mathematical analysis staff of Babcock & Wilcox . . . pioneer in atomic research and development . . . has a career opportunity now open for a senior applied mathematician who has a strong background in numerical analysis.

Our Atomic Energy Division is currently engaged in the challenging field of development and design of nuclear power systems. Present areas of investigation include:

Transient non-linear systems Nuclear reactor theory

In addition to working with some of the most experienced... and intelligent... minds in the industry, you will find Lynchburg, a college city located in the Blue Ridge Country, a pleasant place to live.

If you think you're the man we're seeking, please send a brief resume . . . or a request for more information . . . to: W. F. Porter, Personnel Manager, The Babcock & Wilcox Company, Atomic Energy Division, 1201 Kemper Street, Lynchburg, Va.



THE BABCOCK & WILCOX COMPANY

ATOMIC ENERGY DIVISION



Formed under the sponsorship of a professional staff nucleus of the System, it is MITRE's responsib engineering services for the integrat. Inherent within this continuing syste, mathematicans to range widely across the areas applicable to computer-based systems areas applicable to computer programs areas applicable to computer programs. • Operations Research and Analysis • Lo, • Applied Mathematics • Mat. • Computer Design and Analysis • Proba • Communication Theory • Statisti. • Computer Program. • Statisti. • Program. • Statisti. • Computer Programs. • Computer Programs. • Computer Programs. • Computer Programs. • Nathemat. • Computer Programs. • Computer Programs. • Nathemat. • Computer Programs. • Nathemat. • Computer Programs. • Computer Statistics. • Applied Mathematics. • Applied Mathematics.

THE PROCEEDINGS OF THE SYMPOSIA IN APPLIED MATHEMATICS

These symposia were held under the auspices of the American Mathematical Society and other interested organizations. The Society itself published the first two volumes. The McGraw-Hill Book Company, Inc., published and sold Numbers 3 through 8. These six volumes have now been transferred to the American Mathematical Society by special arrangement with the McGraw-Hill Book Company, Inc. Orders should be placed through the Society.

Members of the Society will henceforth be entitled to the usual 25% discount on all of the volumes. Heretofore this privilege was available to members only for the first two volumes.

- Vol. 1. Non-linear problems in mechanics of continua, 1949.
 - vii + 219 pp. List price: \$5.25
- Vol. 2. Electromagnetic theory, 1950. iii + 91 pp. List price: \$3.00
- Vol. 3. Elasticity, 1950. vi + 233 pp. List price: \$6.00
- Vol. 4. Fluid dynamics, 1953. vi + 186 pp. List price: \$7.00

- Vol. 5. Wave motion and vibration theory, 1954.
 - vi + 169 pp. List price: \$7.00
- Vol. 6. Numerical analysis, 1956. vi + 303 pp. List price: \$9.75
- Vol. 7. Applied probability, 1957. v + 104 pp. List price: \$5.00
- Vol. 8. Calculus of variations and its applications, 1958.
 v + 153 pp. List price: \$7.50

IN PREPARATION:

Volume 9. Orbit theory. Editor R. E. Langer. Approx. \$8.00 Volume 10. Combinatorial designs and analysis. Editor R. E. Bellman



Order from

AMERICAN MATHEMATICAL SOCIETY

190 Hope Street, Providence 6, R.I.



TESTING STATISTICAL HYPOTHESES

By E. L. LEHMANN, Professor of Statistics, University of California, Berkeley. Gives a systematic account of the mathematical theory of hypothesis testing and of the related theory of confidence sets. Includes principal applications of these theories. One of the Wiley Publications in Statistics, Walter A. Shewhart and S. S. Wilks, Editors. 1959. 369 pages. \$11.00

MATHEMATICAL PROGRAMMING and ELECTRICAL NETWORKS

By JACK BONNELL DENNIS, M.I.T. Offers a new approach to mathematical programming based on an analogy with electrical networks. Shows that any d.c. electrical network made up of current sources, voltage sources, ideal diodes, and ideal transformers is equivalent to a pair of dual linear programs. (A Technology Press Research Monograph.) 1959. 186 pages. Illus. \$4.50.

REGRESSION ANALYSIS

By E. J. WILLIAMS, formerly of the University of North Carolina. Providing discussions of methods and practical examples, this book combines theoretical and applied statistics. Suggests relevant and direct techniques for dealing with multivariate problems. 1959. 214 pages. Illus. Prob. \$7.50.

STATISTICAL INDEPENDENCE in PROBABILITY:

ANALYSIS and NUMBER THEORY

By MARK KAC, Cornell University. Based on the Hedrik Lectures given at a meeting of the M.A.A. in the summer of 1955. Considers how statistical independence, in its simplest form, arises in various contexts cutting across different mathematical disciplines. (Carus Monograph #12.) 1959. 93 pages. \$3.00.

Send for your examination copies today.

JOHN WILEY & SONS, Inc., 440-4th Ave., N.Y. 16, N.Y.

Now In Its Second Year . . .

THE PHYSICS OF FLUIDS

EDITOR, F. N. FRENKIEL

Devoted to original contributions to the physics of fluids covering kinetic theory, statistical mechanics, structure and general physics of gases, liquids, plasmas and other fluids and including:

- · Magneto-Fluid Dynamics
- Ionized Fluid and Plasma Physics
- Shock and Detonation Wave Phenomena
- Dynamics of Compressible Fluids
- Boundary Layer and Turbulence Phenomena
- Liquid State Physics and Superfluidity
- Hypersonic Physics
- Rarefied Gas Phenomena
- Upper Atmosphere Phenomena
- Physical Aeronomy
- Transport Phenomena
- Hydrodynamics

As well as certain basic aspects of physics of fluids bordering geophysics, astrophysics, biophysics and other fields of science:

Bi-monthly: Non Members—\$10.00 domestic, \$11.00 foreign

Members of member societies—\$8.00 domestic, \$9.00 foreign

A.P.S., in lieu—\$4.00 domestic, \$5.00 foreign

Orders and inquiries should be sent to:

American Institute of Physics, 335 East 45 Street, New York 17, N.Y.

Proceedings of the Symposia in Applied Mathematics

VOLUME 7

APPLIED PROBABILITY

Papers by: Paul Lévy, J. L. Doob, William Feller, Eberhard Hopf, Guido Münch, G. K. Batchelor, Mark Kac, S. M. Ulam, B. O. Koopman. Published in 1957

\$5.00

104 pages

25% discount to members

AMERICAN MATHEMATICAL SOCIETY
190 Hope Street
Providence, Rhode Island

AUTHORS WANTED BY N. Y. PUBLISHER

Leading book publisher seeks manuscripts of all types: fiction, non-fiction, poetry, scholarly and religious works, etc. New authors welcomed. Send for free booklet E4. Vantage Press, 120 W. 31 St., New York 1.

MEMOIR 33

COHOMOLOGY THEORY AND ALGEBRAIC CORRESPONDENCES

by ERNST SNAPPER

96 pp.

\$1.90

25% discount to members

AMERICAN MATHEMATICAL SOCIETY
190 Hope Street
Providence 6, Rhode Island

THE AMERICAN MATHEMATICAL SOCIETY respectfully invites and deeply appreciates BEQUESTS AND OTHER CAPITAL GIFTS

A legacy or other capital gift to the American Mathematical Society is an effective contribution to the advancement of mathematical research. Investment income provides essential support for the activities of the Society, and most of it is derived from gifts and bequests which have been made over the years by persons interested in mathematics.

It is the policy of the Society to recognize a donor by attaching his name, or any other name specified by him as a memorial, to the fund given by him or to the activity supported by the fund. Gifts and bequests to the Society are deductible for income, gift, and state tax purposes.



AMERICAN MATHEMATICAL SOCIETY
190 Hope Street, Providence 6, Rhode Island

Colloquium Publication Volume 23

ORTHOGONAL POLYNOMIALS

bу

Gabor Szegö

This is a revision of a well-known and definitive treatment of the classical orthogonal polynomials published by the author in this series in 1939. A total of twenty pages has been added, including an appendix which discusses the Pollaczek polynomials.

WITH CHAPTERS ON

General properties of orthogonal polynomials

Jacobi polynomials
Laguerre and Hermite polynomials
Zeros of orthogonal polynomials
Inequalities

Asymptotic properties of the classical polynomials

Expansion problems associated with the classical polynomials

Representation of positive functions

Polynomials orthogonal on the

unit circle

Asymptotic properties of general orthogonal polynomials

Expansion problems associated with general orthogonal polynomials

Interpolation

Mechanical quadrature
Polynomials orthogonal on an
arbitrary curve
Problems and exercises

\$10.60

421 pages

25% discount to members

AMERICAN MATHEMATICAL SOCIETY
190 Hope Street

Providence 6, R.I.

ILLINOIS JOURNAL OF MATHEMATICS

A quarterly journal of basic research in pure and applied mathematics published by the University of Illinois, Urbana.

edited by

REINHOLD BAER ● J. L. DOOB A. H. TAUB ● GEORGE W. WHITEHEAD PAUL T. BATEMAN ● OSCAR ZARISKI

The subscription price is \$9.00 a volume (four numbers); this is reduced to \$5.00 for individual members of the American Mathematical Society. Subscriptions should be sent to the University of Illinois Press, Urbana, Illinois.

2 New Memoirs

SPACES WITH NON-SYMMETRIC DISTANCE

by E. M. Zaustinsky

91 pp.

\$2.00

ASYMPTOTIC BEHAVIOR OF SOLUTIONS OF DIFFERENCE-DIFFERENTIAL EQUATIONS

by Richard Bellman and Kenneth L. Cooke

91 pp.

\$2.00

25% discount to members

AMERICAN MATHEMATICAL SOCIETY
190 Hope Street
Providence 6, Rhode Island

MATHEMATICIAN

An exceptional opportunity exists at the Goodyear Atomic Corporation for a Mathematician with an M.S. Degree. The principal duties will require creative mathematical analysis and solution of problems arising in diffusion cascade theory and operations, in addition to problems of other fields related to these operations. He will apply advanced training and experience in Calculus, Differential Equations, Finite Differences, Complex Variables, and Matrix Algebra. He will advise and interpret, from his findings, the proper courses of action to be taken in the various problems under his consideration.

Goodyear Atomic Corporation, located in southern Ohio, provides an excellent work atmosphere, and, in addition, the advantages of living in a pleasant small community with plenty of economical housing and many recreational facilities.

Submit resume showing math courses completed and salary requirements to:

GOODYEAR ATOMIC CORPORATION

P.O. Box 628
Portsmouth, Ohio

LATEST ADDITIONS TO THE UNIVERSITY SERIES IN UNDERGRADUATE MATHEMATICS

Editorial Board: John L. Kelley and Paul R. Halmos



FINITE MARKOV CHAINS

by John G. Kemeny and J. Laurie Snell, both at Dartmouth College.

This brief treatment presents, for the first time in English, the basic ideas of finite Markov chains, an increasingly important area of probability theory. By concentrating their attention solely on finite chains, the authors are able to give a thorough development with a minimum of mathematical background required.

Ready in January

REAL ANALYSIS

by Edward J. McShane and Truman Botts, both of the University of Virginia.

Some widely useful parts of real function theory, general topology, and functional analysis are covered in this new text for seniors and graduate students. It presents convergence in a unified general-topology setting, treating all limiting processes as instances of this basic concept of limit. A streamlined Daniell-style presentation of the Lebesgue-Stieltjes integral in Rⁿ leads to a development of the Riemann-Stieltjes integral and the elements of measure theory.

288 pp. \$6.60

D. Van Nostrand Company, Inc. 120 Alexander St., Princeton, N.J.

Journals Published by the

American Mathematical Society

Bulletin of the American Mathematical Society

This journal is the official organ of the Society. It reports official acts of the Society and the details of its meetings. It contains some of the officially invited addresses presented before the Society, reviews of advanced mathematical books, research problems and a department of research announcements.

The subscription price is \$7.00 per annual volume of six numbers.

Research Problems and Invited Addresses offered for publication should be sent to B. J.

Research Problems and Invited Addresses offered for publication should be sent to B. J. Pettirs, Department of Mathematics, University of North Carolina, Chapel Hill, N. C.; Book reviews to J. C. Oxtoby, Bryn Mawr College, Bryn Mawr, Pa. Research Announcements offered for publication should be sent to some member of the Council of the Society, and communicated by him to E. E. Motse, Department of Mathematics, University of Michigan, Ann Arbor, Mich. All other communications to the editors should be sent to the Managing Editor, J. C. Oxtoby.

The members of the Council for 1959 are: E. F. Beckenbach, E. G. Begle, R. E. Bellman, Lipman Bers, R. H. Bing, Garrett Birkhoff, R. P. Boas, Salomon Bochner, Richard Brauer, R. H. Bruck, S. S. Chern, J. A. Dieudonné, J. L. Doob, Samuel Eilenberg, P. R. Garabedian, A. M. Gleason, J. W. Green, P. R. Halmos, Edwin Hewitt, Einar Hille, G. P. Hochschild, G. B. Huff, Nathan Jacobson, Irving Kaplansky, D. H. Lehmer, L. H. Loomis, E. J. McShane, W. S. Massey, A. E. Meder, Jr., E. E. Moise, J. C. Oxtoby, B. J. Pettis, R. S. Pierce, Everett Pitcher, G. de B. Robinson, P. C. Rosenbloom, Walter Rudin, Hans Samelson, I. J. Schoenberg, I. E. Segal, N. E. Steenrod, A. W. Tucker, S. M. Ulam, J. W. T. Youngs, Leo Zippin.

Proceedings of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics and is devoted principally to the publication of original papers of moderate length.

The subscription price is \$11.00 per annual volume of six numbers.
Papers in algebra and number theory should be sent to Irving Kaplansky, Eckhart Hall, University of Chicago, Chicago 37, Ill.; in probability, real variables, logic and foundations to P. R. Halmos, Eckhart Hall, University of Chicago, Chicago 37, Ill.; in abstract analysis to either P. R. Halmos or Irving Kaplansky; in geometry and topology to Hans Samelson, Department of Mathematics, University of Michigan, Ann Arbor, Mich.; in other branches of analysis, applied mathematics, and all other fields to R. P. Boas, Lunt Building, Northwestern University, Evanston, Ill. All other communications to the editors should be addressed to the Managing Editor, Irving Kaplansky.

Transactions of the American Mathematical Society

This journal is devoted entirely to research in pure and applied mathematics, and includes in general longer papers than the PROCEEDINGS.

Four volumes of three numbers each will be published in 1958. The subscription price

is \$8.00 per volume.

Papers in analysis, applied mathematics and probability should be sent to LIPMAN BERS, Institute of Mathematical Sciences, New York University, New York, N. Y.; in topology, and logic and foundations to SAMUEL EILENBERG, Hamilton Hall, Columbia University, New York 27, N. Y.; in algebra and number theory to G. P. Hochschild, Department of Mathematics, University of California, Berkeley 4, Calif.; in geometry and abstract analysis to I. M. SINGER, Massachusetts Institute of Technology, Cambridge 39, Mass. All other communications to the editors should be addressed to the Managing Editor. SAMUEL EILENBERG. Editor, SAMUEL EILENBERG.

Mathematical Reviews

This journal contains abstracts and reviews of the current mathematical literature of the world. It is sponsored by thirteen mathematical organizations, located both in the United States and abroad.

MATHEMATICAL REVIEWS is published monthly, excepting July. The subscription price is \$50.00 per annual volume of eleven numbers.

Notices of the American Mathematical Society

This journal announces the programs of the meetings of the Society. It carries the abstracts of all contributed papers presented at the meetings of the Society and publishes

news items of interest to mathematical scientists.

The subscription price is \$7.00 per annual volume of 7 numbers. A single copy is \$2.00.

All communications should be addressed to the Editor. G. L. Walker, 190 Hope Street, Providence 6, R. I. News items and insertions for each issue must be in the hands of the editor on or before the deadline for the abstracts of the papers to be presented in the meetings announced in that issue. These deadlines are published regularly on the inside front cover page.

Some Recent Publications of the Society

E. Snapper. Cohomology theory and algebraic correspondences. Memoir 33.	\$ 1.90
L. P. Eisenhart. Non-Riemannian geometry. Published in 1927 and reprinted in 1958, Colloquium Volume 8.	\$ 4.90
R. S. Pierce. Translation lattices. Memoir 32.	\$ 1.70
E. Hille and R. S. Phillips. Functional analysis and semi-groups. An enlarged and completely revised edition of Colloquium Volume 31, of the same title, by Hille.	\$ 13.80
J. L. Walsh. Interpolation and approximation. An enlarged and extensively revised edition of Colloquium Volume 20.	\$ 7.00
W. H. Gottschalk and G. A. Hedlund. Topological dynamics. Colloquium Volume 36.	\$ 5.10
N. Jacobson. Structure of rings. Colloquium Volume 37.	\$ 7.70
C. Chevalley. Introduction to the theory of algebraic functions of one variable. Mathematical Surveys Volume 6.	\$ 4.00
S. Bergman. The kernel function and conformal mapping. Mathematical Surveys Volume 5.	\$ 4.00
O. F. G. Schilling. The theory of valuations. Mathematical Surveys Volume 4.	\$ 6.00
M. Marden. The geometry of the zeros of a polynomial in a complex domain. Mathematical Surveys Volume 3.	\$ 5.00
Russian Translations. Volume 9. Four papers on group theory.	\$ 5.00
Russian Translations. Volume 10. Thirteen papers on analysis.	\$ 6.60
Russian Translations. Volume 11. Four papers on topology.	\$ 5.90
Russian Translations. Volume 12. Twelve papers on analysis, probability and topology.	\$ 4.60

The price to members of the American Mathematical Society is 25% less than list.

A complete catalog of publications will be sent upon request

American Mathematical Society
190 Hope Street, Providence 6, Rhode Island