

Studies in LINEAR AND NON-LINEAR PROGRAMMING

Kenneth J. Arrow, Leonid Hurwicz, and Hirofumi Uzawa. Includes first extensive study of infinite-dimensional programming problems and first proofs of the gradient method for programming problems with concave and more general functions. Stanford Mathematical Studies in the Social Sciences, II. \$7.50

STANFORD UNIVERSITY PRESS
Stanford, California

**CUSHING-MALLOY,
INC.**

Ann Arbor, Michigan

LITHOPRINTERS

Known for

**QUALITY—ECONOMY
SERVICE**

Let us quote on your next
printing

Announcing

THE PHYSICS OF FLUIDS

A new journal devoted to original contributions to the physics of fluids covering kinetic theory, statistical mechanics, structure and general physics of gases, liquids, 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. Published by the American Institute of Physics and edited by a distinguished board of scientists, the publication will be indispensable to all research workers, libraries, laboratories, and institutions interested in the broad field of the physics of fluids.

Editor, F. N. Frenkiel, Applied Physics Lab., Johns Hopkins Univ.,
Silver Spring, Md.

Issued bimonthly—first issue January, 1958

Subscription Rates: \$10.00 domestic, \$11.00 foreign

Orders and Inquiries should be addressed to:

AMERICAN INSTITUTE OF PHYSICS
335 East 45 Street New York 17, N.Y.

The Applied Physics Laboratory
of
The Johns Hopkins University
Announces Appointments
for
SENIOR SCIENTIFIC STAFF

The Assessment Division of The Applied Physics Laboratory has undertaken new responsibilities and is expanding its Senior Analytical Staff. Senior Scientists in such fields as Mathematics, Physics and Physical Chemistry have in the past proven very effective in solving the types of problems involved which include analyses of tactical situations, the employment of future weapon systems and the application of the most recent advances in science and technology.

Performance of the work requires close association with scientists of other laboratories, operations research personnel of all branches of the Armed Services, and with senior military and civilian personnel.

Studies undertaken by this group will provide guide lines for the hardware research of future years. Staff members are expected to initiate ideas in support of a broad program of National Defense needs and carry them through appropriate analyses with assurance that sound results will be given consideration by the responsible agencies.

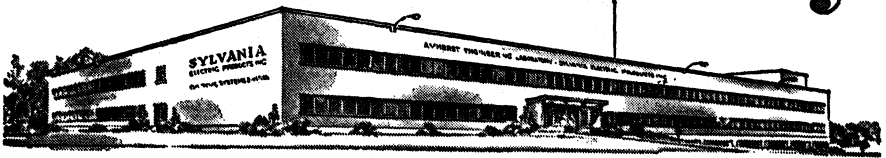
The Laboratory's locale, equidistant between Baltimore and Washington, D. C., allows staff members to select urban, suburban or rural living and either of these two outstanding centers of culture as a focal point for fine living.

These appointments offer exceptional opportunities. For information and arrangements for interview, write in confidence to:

Dr. Charles F. Meyer
Assessment Division Supervisor
The Applied Physics Laboratory
The Johns Hopkins University
8637 Georgia Avenue
Silver Spring, Maryland

ENGINEERS - SCIENTISTS

The Amherst Laboratory



Sylvania's

Center for Communications Research & Development

Mathematicians with advanced degrees and a lasting interest in some field of mathematical research will find in Sylvania's Amherst Laboratory both the opportunity and the environment to do creative work. Areas of interest include, BUT ARE NOT LIMITED TO, number theory, group theory, combinatorial design, stochastic processes, Monte Carlo techniques, information theory, game theory and statistical decision theory.

Scientists evaluating our employment opportunities will find that we amply reward creative ability, not only with a competitive, industrial-range salary, but also with liberal fringe benefits. Sylvania provides both life and hospitalization insurance as a company-paid benefit, and encourages membership in professional societies and subscriptions to technical publications by paying one-half the cost of dues and subscription fees.

The Amherst Laboratory is located in Western New York near Buffalo, Niagara Falls and the Province of Ontario.

Mathematicians interested in the Laboratory's expanding program of research are invited to write, in complete confidence, to the undersigned. A brief resume of education, experience and current interests, together with address and telephone number, will bring a prompt reply.

Dr. R. L. San Soucie

SYLVANIA ELECTRONIC SYSTEMS

A Division of



SYLVANIA ELECTRIC PRODUCTS INC.
1177 Wehrle Drive, Amherst 21, New York

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. PETTIS, 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. MOISE, 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 1958 are: E. F. Beckenbach, E. G. Begle, R. E. Bellman, Lipman Bers, R. H. Bing, Garrett Birkhoff, R. P. Boas, Jr., Salomon Bochner, Richard Brauer, S. S. Chern, J. A. Dieudonné, J. L. Doob, Samuel Eilenberg, A. M. Gleason, J. W. Green, P. R. Halmos, Einar Hille, G. P. Hochschild, G. B. Huff, Mark Kac, Irving Kaplansky, J. L. Kelley, D. H. Lehmer, L. H. Loomis, W. S. Massey, E. J. McShane, A. E. Meder, Jr., E. E. Moise, Deane Montgomery, J. C. Oxtoby, B. J. Pettis, R. S. Pierce, P. C. Rosenbloom, Walter Rudin, Hans Samelson, R. D. Schafer, I. J. Schoenberg, I. E. Segal, N. E. Steenrod, A. H. Taub, A. W. Tucker, S. M. Ulam, A. D. Wallace, J. W. T. Youngs.

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.

Three volumes of two numbers each will be published in 1958. The subscription price is \$8.00 per volume.

Papers in geometry, differential equations and functions of complex variables should be sent to S. S. CHERN, Eckhart Hall, University of Chicago, Chicago 37, Ill.; in algebra and number theory to G. P. HOCHSCHILD, Department of Mathematics, University of Illinois, Urbana, Ill.; in analysis (except for differential equations and functions of a complex variable), applied mathematics and probability to MARK KAC, White Hall, Cornell University, Ithaca, N. Y.; in topology, logic and foundations to SAMUEL EILENBERG, Hamilton Hall, Columbia University, New York 27, N. Y. All other communications to the editors should be addressed to the Managing 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 \$35.00 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 J. H. CURTISS, 190 Hope Street, Providence 6, Rhode Island. News items and insertions for each issue must be in the hands of the editor on or before the deadline for the abstracts for 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

L. P. Eisenhart, <i>Non-Riemannian geometry</i> . Published in 1927 and reprinted in 1958, Colloquium Volume 8.	\$ 4.90
Edward Halpern, <i>Twisted polynomial hyperalgebras</i> . Memoir 29.	\$ 1.50
John von Neumann, 1903-1957. Supplement to the May, 1958 issue of the Bulletin of the American Mathematical Society.	\$ 3.20
E. Hille and R. S. Phillips. <i>Functional analysis and semi-groups</i> . An enlarged and completely revised edition of Colloquium Volume 31, of the same title, by Hille.	\$13.80
J. L. Walsh. <i>Interpolation and approximation</i> . An enlarged and extensively revised edition of Colloquium Volume 20.	\$ 7.00
W. H. Gottschalk and G. A. Hedlund. <i>Structure of rings</i> . Colloquium Volume 37.	\$ 5.10
N. Jacobson. <i>Structure of rings</i> . Colloquium Volume 37.	\$ 7.70
C. Chevalley. <i>Introduction to the theory of algebraic functions of one variable</i> . Mathematical Surveys volume 6.	\$ 4.00
S. Bergman. <i>The kernel function and conformal mapping</i> . Mathematical Surveys volume 5.	\$ 4.00
O. F. G. Schilling. <i>The theory of valuations</i> . Mathematical Surveys volume 4.	\$ 6.00
M. Marden. <i>The geometry of the zeros of a polynomial in a complex domain</i> . Mathematical Surveys volume 3.	\$ 5.00
Russian Translations. Volume 5. <i>Eight papers on functional analysis and partial differential equations</i> .	\$ 4.30
Russian Translations. Volume 6. <i>Five papers on algebra and group theory</i> .	\$ 5.20
Russian Translations. Volume 7. <i>Two papers on homotopy theory of continuous mappings</i> .	\$ 5.50
Edward Halpern, <i>Twisted polynomial hyperalgebras</i> . Memoir 29.	\$ 1.50
Ernst Snapper. <i>Cohomology groups and genera of higher-dimensional fields</i> . Memoir 28.	\$ 1.90
Emery Thomas. <i>The generalized Pontrjagin cohomology operations and rings with divided powers</i> . Memoir 27.	\$ 1.70
A. Erdélyi and C. A. Swanson. <i>Asymptotic forms of Whittaker's confluent geometric functions</i> . Memoir 25.	\$ 1.40

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 12, Rhode Island