NOTICES
OF THE
AMERICAN MATHEMATICAL SOCIETY
EDITED BY
W. T. MARTIN  G. B. PRICE

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The five hundred first meeting of the American Mathematical Society will be held at Columbia University in New York City on Friday and Saturday, April 23–24, 1954. The Society, by a Council resolution of September 1, 1953, associated itself with Columbia University in supporting the theme of the University's Bicentennial Celebration—Man's Right to Knowledge and the Free Use Thereof—and joined with the University in inviting Professor John von Neumann to address a special session of its April, 1954, meeting in New York in honor of the occasion. Professor von Neumann's address, entitled *The mathematical method*, will be delivered in The McMillin Theatre on Friday at 8:00 P.M. The Society will present a plaque to Columbia University felicitating it on the completion of two centuries of service in the furtherance of wisdom and the enlightenment of mankind.

Upon invitation of the Committee to Select Hour Speakers for Eastern Sectional Meetings, Professor Harry Pollard of Cornell University will address the Society on Friday at 2:00 P.M. in Havemeyer Hall, Room 309, on *Fundamental sets of functions*, and Professor F. I. Mautner of The Johns Hopkins University will address the Society on Saturday at 2:00 P.M. in the Pupin Physical Laboratories, Room 301, on *Fourier analysis and the theory of groups*.

Sessions for contributed papers will be held on Friday afternoon in Havemeyer Hall, Room 309, on Saturday morning in Hamilton Hall, Rooms 202, 203, and on Saturday afternoon in the Pupin Physical Laboratories, Rooms 301, 329, 428.

A Council resolution of December 29, 1953 approved making available at the April meetings a file of academic institutions, industrial firms and government agencies having positions to fill. This file is maintained by the Committee on the Employment Register, Professor J. S. Frame, Chairman, of the Mathematical Association of America.

Columbia University may be reached by the Broadway–7th Avenue
line of the IRT Subway at the 116th Street station. The McMillin Theatre is on the north side of 116th Street at Broadway; Havemeyer Hall is on the Broadway side of the campus at 118th Street; Hamilton Hall is on the south side of 116th Street at Amsterdam Avenue; the Pupin Physical Laboratories are on the south side of 120th Street at Broadway. A registration desk will be found near the regular sessions of the meeting at the times of the sessions.

PROGRAM OF THE SESSIONS
(Time limit for contributed papers, 10 minutes)

FRIDAY, 2:00 P.M.
General Session, Havemeyer Hall, Room 309
Fundamental sets of functions (One hour)
Professor Harry Pollard, Cornell University

FRIDAY, 3:15 P.M.
Session on Analysis and Geometry, Havemeyer Hall, Room 309
(1) The regular Cauchy problem for the Euler-Poisson-Darboux equation
Miss Ruth M. Davis, University of Maryland
(2) On certain series expansions involving Whittaker functions and Jacobi polynomials
Dr. Peter Henrici, American University
(3) A singular problem of perturbation theory
Dr. Jürgen Moser, New York University
(Introduced by Professor Wilhelm Magnus)
(4) Lipschitz conditions for harmonic and discrete harmonic functions
Professor J. L. Walsh, Harvard University, and Professor D. M. Young, Jr., University of Maryland
(5) Periodic solutions of a nonlinear wave equation
Professor F. M. Stewart, Brown University
(6) Criteria of boundedness of the solutions of nonlinear differential equations
Professor C. T. Taam, Catholic University of America
(7) Critical points at infinity and forced oscillation
Mr. R. E. Gomory, Princeton University
(8) A uniqueness theorem for the parabolic equation
\[ u_t = a(x)u_{xx} + b(x)u_x + c(x)u. \]
Preliminary report

Dr. J. B. Serrin, Massachusetts Institute of Technology

FRIDAY, 8:00 P.M.

Special Session, The McMillin Theatre

The Mathematical Method
Professor John von Neumann, Institute for Advanced Study

SATURDAY, 10:00 A.M.

Session on Analysis, Hamilton Hall, Room 202

(9) Some integral formulas for closed hypersurfaces
Professor C. C. Hsiung, Lehigh University

(10) A theorem on the construction of affine connection in Cartan space of line elements
Professor Valdemars Punga, Rensselaer Polytechnic Institute

(11) On the equivalence of the two methods of Borel-summability
Dr. Dieter Gaier, Harvard University
(Introduced by Professor J. L. Walsh)

(12) Summability factors for absolute Cesàro summable series
Dr. Alexander Peyerimhoff, University of Cincinnati
(Introduced by Professor C. N. Moore)

(13) Elementary Mercerian theorems
Dr. W. B. Jurkat, University of Cincinnati
(Introduced by Professor C. N. Moore)

(14) On questions of regularity for Nörlund means of double series
Professor C. N. Moore, University of Cincinnati

(15) Summability of generalized Bernstein polynomials
Professor P. L. Butzer, McGill University

Session on Applied Mathematics, Hamilton Hall, Room 203

(16) The expected number of components under a random mapping function
Dr. M. D. Kruskal, Princeton University

(17) Indefinite integrals involving the special functions
Mr. L. C. Maximon, Brown University
(Introduced by Professor G. W. Morgan)
(18) Two-terminal relay and switching circuits. Preliminary report
   Professor Charles Saltzer, Case Institute of Technology

(19) A transonic approximation
   Professor J. B. Diaz and Professor G. S. S. Ludford, University of Maryland

(20) A Rayleigh-Ritz procedure with arbitrary error estimate for
do differential operators with finite perturbations
   Professor H. F. Weinberger, University of Maryland

(21) Coulomb wave functions in the transition region
   Dr. Milton Abramowitz, National Bureau of Standards, Washington, and Professor H. A. Antosiewicz, American University

(22) A maximum principle for the drag in linearized airfoil theory. Preliminary report
   Dr. Raymond Sedney, Ballistic Research Laboratories

SATURDAY, 2:00 P.M.

General Session, Pupin Physical Laboratories, Room 301

Fourier analysis and the theory of groups (One hour)
   Professor F. I. Mautner, Johns Hopkins University

SATURDAY, 3:15 P.M.

Session on Algebra and Number Theory, Pupin Physical Laboratories, Room 428

(23) A note on purely inseparable extensions
   Mr. Morris Weisfeld, Yale University

(24) A generalization of the Young operator and its application to
   $GL(2, q)$
   Dr. M. D. Burrow, McGill University
   (Introduced by Professor Edward Rosenthal)

(25) Decomposition of a group with a single defining relation into a
   free product
   Mr. Abe Shenitzer, New York University
   (Introduced by Professor Wilhelm Magnus)

(26) Numerical computation of the characteristic roots of a matrix
    and of the error in the approximate solution of linear equations
    Professor A. T. Brauer, University of North Carolina, and
    Professor H. T. LaBorde, University of the South

(27) Applications of relative cohomology theory to algebraic number theory
    Mr. Karel deLeeuw, Dartmouth College
(28) Abelian varieties over $p$-adic fields
   Mr. Arthur Mattuck, Princeton University

(29) On the group algebra of the direct product of a compact group
    and a locally compact abelian group
   Dr. A. B. Willcox, Amherst College

Session on Analysis, Pupin Physical Laboratories, Room 301

(30) Banach algebras of almost periodic functions
    Mr. Sigurdur Helgason, Princeton University

(31) Multiplicative groups of analytic functions
    Professor Walter Rudin, University of Rochester

(32) On the zeros of successive derivatives
    Professor Albert Edrei, Syracuse University

(33) Nonlinear integral equations
    Professor R. H. Cameron, University of Minnesota and Institute
    for Advanced Study, and Mr. J. M. Shapiro, University of Minnesota

(34) Simplicity of spectra in general operators
    Professor František Wolf, University of California, Berkeley

(35) A theorem on convergence of projections
    Dr. W. G. Bade, Yale University

(36) Oscillation and boundedness of solutions of $y'' + q(x)y = 0$
    Professor J. H. Barrett, University of Delaware

Session on Geometry and Topology, Pupin Physical Laboratories,
Room 329

(37) On convex surfaces
    Professor C. C. Hsiung and Mr. C. B. Sensenig, Lehigh University

(38) Arrangements of equal spheres in non-Euclidean spaces
    Professor H. S. M. Coxeter, University of Toronto

(39) Continuous collections of decomposable continua on a spherical surface
    Professor S. E. Dyer, Jr., University of Georgia

(40) A connected set such that the complement of every connected subset is countable
    Professor Mary Ellen Rudin, University of Rochester

(41) A property of compact absolute neighborhood retracts
    Dr. E. R. Fadell, Harvard University
A relation between perfect separability, completeness, and normality in semi-metric spaces
Mr. L. F. McAuley, University of North Carolina
(Introduced by Professor F. B. Jones)

$N$-homogeneity implies $N-1$ homogeneity
Mr. Morton Brown, University of Wisconsin

SUPPLEMENTARY PROGRAM
(To be presented by title)

The Serre group $E_2^q$
Mr. A. F. Bartholomay, Massachusetts Institute of Technology

Cunleffe's parametric solution for rational cuboids
Mr. H. W. Becker, Station WOW

Automedian tetrahedrons. Preliminary report
Mr. H. W. Becker, Station WOW

A note on the primitive roots $(\text{mod } p^n)$
Professor A. T. Brauer, University of North Carolina

Hadamard matrices
Professor J. L. Brenner and Professor K. L. Cooke, State College of Washington

The coefficients of the reciprocal of $I_0(x)$
Professor Leonard Carlitz, Duke University

Some arithmetic properties of the Olivier functions
Professor Leonard Carlitz, Duke University

Congruences for generalized Bell and Stirling numbers
Professor Leonard Carlitz, Duke University

On a problem of minimal surface with polygonal boundary
Professor Y. W. Chen, Wayne University

An analytic characterization of distributions whose partial derivatives are representable by measures
Professor Herbert Federer, Brown University

On a unique subdirect factorization in universal algebras and their characterization by their identities. Preliminary report
Professor A. L. Foster, University of California, Berkeley

The Schwarzian derivative and convex functions
Mr. R. F. Gabriel, Rutgers University

$\log(e^x e^y)$ in a free associative ring
Mr. Karl Goldberg, National Bureau of Standards, Washington
(57) On a generalization of the integrals of Weber and Schafheitlin
Professor E. C. Gras, U. S. Naval Academy

(58) On the distribution of values of analytic almost periodic functions
Mr. Sigurdur Helgason, Princeton University

(59) Interrelations between directed sets and filters
Miss Gertrude I. Heller, Johns Hopkins University
(Introduced by Dr. Isidor Heller)

(60) Modules with a group as operators
Dr. D. G. Higman, McGill University

(61) Induced and produced modules. I
Dr. D. G. Higman, McGill University

(62) Induced and produced modules. II
Dr. D. G. Higman, McGill University

(63) A geometric solution of a system of linear inequalities.
Preliminary report
Professor W. J. Klimczak, Trinity College

(64) A necessary condition for arithmetic equivalence between
character algebra and center of group ring
Professor Joachim Lambek, McGill University

(65) Power series in fields with nonarchimedean valuation. Preliminary report
Mr. Viktors Linis, University of Saskatchewan
(Introduced by Dr. G. H. M. Thomas)

(66) Bornological spaces of continuous functions and cartesian products
Professor Leopoldo Nachbin, University of California, Los Angeles

(67) Groups and spaces of loops
Professor Hans Samelson, Institute for Advanced Study

(68) Localization of conjugate multiple trigonometric series
Dr. V. L. Shapiro, Institute for Advanced Study and Rutgers University

(69) Tables of Bennett functions for the two-frequency modulation
product problem for the half-wave linear rectifier
Dr. R. L. Sternberg, Laboratory for Electronics, Inc., Mr. J. S. Shipman and Mr. W. B. Thurston, Massachusetts Institute of Technology
(70) Tables of Bennett functions for the two-frequency modulation product problem for the half-wave square law rectifier. Preliminary report
Dr. R. L. Sternberg, Laboratory for Electronics, Ind., Mr. J. S. Shipman, Massachusetts Institute of Technology, and Professor Hyman Kaufman, McGill University

(71) Elementary methods in the numerical design of microwave dielectric lenses. Preliminary report
Dr. R. L. Sternberg, Laboratory for Electronics, Inc.

L. W. Cohen
Associate Secretary

Washington, D. C.
March 13, 1954

MEMORANDUM TO MEMBERS OF THE SOCIETY

The National Science Foundation is organizing a National Register of Scientific and Technical Personnel. Unlike the Roster compiled during World War II and the Register of 1950–51, this one will be decentralized. The American Mathematical Society has agreed to compile and maintain the section of the Register covering the mathematical sciences.

There are two major uses to which this Register can be put. In case of a national emergency, the Register will quickly provide lists of specialists to whom essential work might be referred by panels of experts, chosen by the appropriate scientific organizations. This last fact is important, since the mathematical organizations are obviously the ones best able to see that the abilities of individual mathematicians are not wasted by the senseless assignments which might result from a rapid mobilization.

The second use of the Register is in connection with statistical studies of scientific manpower. There is no doubt that the country's demand for scientific manpower far exceeds the supply. Effective policies for increasing this supply must be based on accurate information about scientists. Such information is not now available, but can be furnished to a considerable extent by this Register.

Both these uses of this Register are highly important, and so you are urged to complete and return the questionnaire which you will receive soon.

E. G. Begle
Secretary
The five hundred second meeting of the American Mathematical Society will include a Symposium in Applied Mathematics (sponsored by the Society and the Office of Ordnance Research) and be held at the University of Chicago on Thursday, Friday and Saturday, April 29, 30 and May 1, 1954. All sessions will be held in Eckhart Hall.

Registration will be in the Common Room on the second floor of Eckhart Hall, beginning at 8:00 A.M. on Thursday, Friday and Saturday.

By invitation of the Committee to Select Hour Speakers for Western Sectional Meetings, Professor S. C. Kleene of the University of Wisconsin will address the Society on the topic Hierarchies of number-theoretic predicates. The lecture is scheduled for 2:00 P.M. on Friday in Eckhart 133.

Sessions for the Symposium will be held on Thursday at 9:00 A.M. and 2:00 P.M., and on Friday at 9:00 A.M., in Eckhart 133.

Sessions for the presentation of contributed papers will be held at 3:15 P.M. on Friday, and at 9:00 A.M. and 10:30 A.M. on Saturday.

Special sessions for papers received after the deadline will be held on Saturday at 2:00 P.M.

There will be a tea in the Common Room of Eckhart Hall starting at 4:15 P.M. on Thursday and Friday.

There will be a meeting of the Council at 5:15 P.M. on Friday in Room 316 of Eckhart Hall. After dinner the Council will reconvene in the Common Room.

The facilities of Hutchinson Commons, a dining hall directly across the court from Eckhart Hall, will be available to members of the Society and guests for all meals.

The following hotels have agreed to accommodate those members of the Society making reservations in advance:
in the University district

Shoreland Hotel
5454 South Shore Drive
Single $7.50-8.00 Double $9.50-10.00
Del Prado Hotel
5307 S. Hyde Park Blvd.
6.00-10.00 8.00-12.00
Hotels Windermere
1642 East 56th Street
6.50-7.50 8.50-10.00
Hotel Broadview
540 S. Hyde Park Blvd.
3.50-5.00 6.00-8.00
Hotel Miramar
6218 S. Woodlawn
3.25-4.50 4.50-6.00
Hyde Park Y.M.C.A.
1400 East 53rd Street
2.25

in the Loop district

The Conrad Hilton
6.50-10.00 8.50-16.00

Reservations should be made directly with the hotel.

Eckhart Hall is located at the corner of 58th Street and University Avenue. It may be reached from the Loop district either via the Illinois Central Electric Train, in which case one leaves the train at 57th Street and walks west, or via the Jackson Park Elevated Train, in which case one leaves the train at University Avenue and walks north.

Mail and telegrams for those attending the meeting should be addressed: Care of the Department of Mathematics, Eckhart Hall, Room 313, University of Chicago, Chicago 37, Illinois.

PROGRAM OF THE SESSIONS
(Time limit for each contributed paper, 10 minutes)

THURSDAY 9:00 A.M.

Symposium Session I, Room 133
Chairman: Major General L. E. Simon, Department of the Army
Operations Research (30 minutes)
Professor P. M. Morse, Massachusetts Institute of Technology
Problem of inductive inference (30 minutes)
Professor Jerzy Neyman, University of California, Berkeley
Recent developments in analysis of variance (30 minutes)
Professor H. O. Hartley, University of London and Iowa State College
Unsolved problems in statistical mechanics (30 minutes)
Professor J. E. Mayer, University of Chicago

THURSDAY, 2:00 P.M.

Symposium Session II, Room 133
Chairman: Dr. W. W. Leutert, Ballistic Research Laboratories
Computational methods (30 minutes)
Professor M. R. Hestenes, University of California, Los Angeles
Motivations for working in numerical analysis (30 minutes)
Mr. John Todd, National Bureau of Standards
Some numerical computations in ordnance problems (30 minutes)
Professor A. A. Bennett, Brown University

FRIDAY, 9:00 A.M.

Symposium Session III, Room 133
Chairman: Dr. T. J. Killian, Office of Ordnance Research
The simplest rate theory of pure elasticity (30 minutes)
Professor C. A. Truesdell, Indiana University
On the stability of mechanical systems (30 minutes)
Professor J. J. Stoker, New York University
Problems associated with hyperbolic partial differential equations (30 minutes)
Professor Florent Bureau, University of Liége and the University of Chicago
On the nature of differential operators and boundary value problems (30 minutes)
Professor William Feller, Princeton University

FRIDAY, 2:00 P.M.

General Session, Room 133
Hierarchies of number-theoretic predicates (One hour)
Professor S. C. Kleene, University of Wisconsin

FRIDAY, 3:15 P.M.

Session on Algebra, Room 133
(1) Power-type endomorphisms of some class 2 groups
Professor Franklin Haimo, Washington University
(2) The Wedderburn theorem
   Professor H. E. Goheen, Iowa State College

(3) Some remarks on $p$-rings and their Boolean geometry
   Professor J. L. Zemmer, Jr., University of Missouri

(4) Automorphisms of the projective unitary groups
   Mr. J. H. Walter, University of Michigan

(5) Trace on $AW^*$-algebras
   Mr. Ti Yen, University of Illinois

(6) On rings of continuous functions in which every finitely generated ideal is principal
   Professors Leonard Gillman and Melvin Henriksen, Purdue University

(7) Concerning adequate rings and elementary divisor rings
   Professors Leonard Gillman and Melvin Henriksen, Purdue University

Session on Analysis, Room 202

(8) On the structure of recurrence relations. II
   Dr. Imanuel Marx, University of Michigan and Willow Run Research Center

(9) On the generalization of Iglisch's existence theorem to parametric differential equation
   Professor M. Z. Krzywoblocki, University of Illinois

(10) Asymptotic solution of differential equations in a domain containing a regular singular point
    Drs. N. D. Kazarinoff and R. W. McKelvey, Purdue University

(11) Solutions of some irreducible linear partial differential equations of the second order
    Dr. L. V. Robinson, Wright-Patterson Air Force Base

(12) Semigroups with the Hahn-Banach extension property
    Dr. R. J. Silverman, Illinois Institute of Technology

(13) On a generalization of polygenic functions
    Mr. E. P. Merkes, DePaul and Northwestern Universities

(14) Two theorems concerning some function spaces. Preliminary report
    Dr. E. R. Johnston, Wisconsin State College
SATURDAY, 9:00 A.M.

Session on Analysis, Room 133

(15) Induced homomorphisms of group algebras
    Professor Meyer Jerison, Purdue University and Professor
    Gustave Rabson, Antioch College

(16) A generalization of the Riesz theory of completely continuous
    transformations
    Professor L. M. Graves, University of Chicago

(17) A note on the Hamburger and Stieltjes moment problems
    Professor W. T. Reid, Northwestern University

(18) A dominated convergence theorem
    Professor E. J. McShane, University of Virginia

(19) An inequality for linear operators between $L^p$ spaces
    Professor R. E. Fullerton, University of Wisconsin

(20) Numerical Tauberian theorems for Dirichlet and Lambert
    series
    Professor Jacob Korevaar, University of Wisconsin

(21) Concerning integrals. Ila
    Professor Pasquale Porcelli, De Paul University

Session on Algebra, Room 202

(22) On discriminants of binary quadratic forms with a single
    class in each genus
    Professor Sarvadaman Chowla and Dr. W. E. Briggs, University
    of Colorado

(23) An investigation of the number of classes in the genus of
    certain indefinite ternary quadratic forms. Preliminary report
    Mr. D. C. B. Marsh, University of Colorado
    (Introduced by Professor B. W. Jones)

(24) $J$-simple algebras
    Dr. L. M. Weiner, De Paul University

(25) On the homomorphisms of an algebra onto a Frobenius algebra
    Dr. W. E. Deskins, Ohio State

(26) A bound for a determinant with dominant principal diagonal
    Professor J. L. Brenner, State College of Washington

(27) Approximation to irrationals by classes of rational numbers
    Professor Leonard Tornheim, University of Michigan
Session on Topology and Statistics, Room 202

(28) Two theorems on the cohomology groups of a chain complex.
Preliminary report
Mr. R. J. Nunke, Northwestern University

(29) A characterization of tame curves in 3-space
Professor O. G. Harrold, Dr. H. C. Griffith and Mr. E. E. Posey, University of Tennessee

(30) Mappings from spheres to Euclidean spaces. Preliminary report
Dr. C. T. Yang, University of Illinois

(31) Compound group extension. IV
Dr. Maurice Auslander, University of Chicago

(32) An empirical distribution function for sampling with incomplete information
Drs. Miriam C. Ayer and Edward Silverman, Sandia Corporation, Professors H. D. Brunk and G. N. Ewing, University of Missouri, Professor W. T. Reid, Northwestern University

(33) Distribution of solution times for random communication in a task-oriented group
Professor H. G. Landau, University of Chicago

Session on Applied Mathematics, Room 133

(34) Digitalization, systematization and formulation of the theory and methods of the propositional calculus. Preliminary report
Mr. R. S. Ledley, ACF Electronics

(35) Existence and uniqueness of a periodic solution for Duffing's equation with damping and a forcing term
Professor W. S. Loud, University of Minnesota

(36) Numerical treatment of differential equations. I
Professor P. C. Hammer and Mr. Jack Hollingsworth, University of Wisconsin

(37) Numerical treatment of differential equations. II
Professor P. C. Hammer and Mr. Jack Hollingsworth, University of Wisconsin

(38) Numerical integration near a logarithmic singularity
Mr. Y. L. Luke, Midwest Research Institute

(39) Scattering of electromagnetic waves from a random surface
Mr. W. C. Hoffman, Navy Electronics Laboratory
(40) The non-Euclidean geometry of binocular visual space  
Dr. A. A. Blank, University of Illinois

(41) On the minimality of the variational principles of classical  
particle mechanics  
Professor H. D. Block, University of Minnesota

(42) The solution of a free boundary problem by conformal mapping  
Dr. E. B. McLeod, Jr., University of Colorado

SATURDAY, 2:00 P.M.

Special Sessions for Late Papers
(Program available at registration desk)

SUPPLEMENTARY PROGRAM
(To be presented by title)

(43) On non-linear differential equations of the second order with  
integrable forcing term  
Professor H. A. Antosiewicz, The American University

(44) Relative cohomology groups of groups  
Dr. Maurice Auslander, University of Chicago

(45) A remark on integral invariants  
Professor H. D. Block, University of Minnesota

(46) Linear recurrence relations  
Professor J. L. Brenner, State College of Washington

(47) The factorization of orthogonal matrices  
Professor J. L. Brenner, State College of Washington

(48) On the zeros of certain Laplace integrals. I  
Professor W. B. Caton, De Paul University

(49) On certain division algebras  
Dr. W. F. Darsow, De Paul University

(50) An inverse theory of conservative fields of force  
Professor John De Cicco, De Paul University

(51) Some theorems in the mapping theory of surfaces  
Professor John De Cicco, De Paul University

(52) A radical for near-rings  
Dr. W. E. Deskins, Ohio State University

(53) On the convergence behavior of trigonometric interpolating  
polynomials  
Dr. R. P. Gosselin, Youngstown College

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(54) Remarks on singular points of functional equations
    Professor L. M. Graves, University of Chicago

(55) The convergence of Type A Gram-Charlier series
    Professor Ernest Ikenberry, Alabama Polytechnic Institute

(56) Physical systems of curves in general fields of force
    Professor Edward Kasner, Columbia University, and Professor John De Cicco, De Paul University

(57) Finite dimensional modules
    Professor W. G. Leavitt, University of Nebraska

(58) A separation theorem
    Dr. G. R. Livesay, University of Michigan
    (Introduced by Professor A. J. Lohwater)

(59) A non-exceptional element of Wiener space
    Professor W. S. Loud, University of Minnesota

(60) Potential theory in the geometry of matrices
    Professor Josephine Mitchell, University of Illinois

(61) A remark on a paper of P. Samuel
    Professor H. T. Muhly, State University of Iowa

(62) Algebras of differentiable functions
    Professor S. B. Myers, University of Michigan

(63) Closed algebras of analytic functions of one variable with an isolated singularity
    Professor Leopoldo Nachbin, Institute for Numerical Analysis and University of California, Los Angeles

(64) A relation between the functors Ext and Tor. Preliminary report
    Mr. R. J. Nunke, Northwestern University

(65) Bounds for harmonic and biharmonic functions. II
    Professors L. E. Payne and H. F. Weinberger, University of Maryland

(66) Concerning integrals. Ilb
    Professor Pasquale Porcelli, De Paul University

(67) Grassmann's extensive algebra and modern number theory
    Dr. A. R. Schweitzer, Lake Forest, Illinois

(68) A generalization of Borsuk-Ulam's theorem
    Dr. C. T. Yang, University of Illinois
Every linear transformation is a sum of nonsingular ones
Professor Daniel Zelinsky, Northwestern University

F. G. Dressel
Office of Ordnance Research

J. W. T. Youngs
Associate Secretary

Bloomington, Indiana
March 10, 1954

FIVE HUNDRED THIRD MEETING
Yosemite National Park, California
May 1, 1954

The five hundred third meeting of the American Mathematical Society will be held at Yosemite National Park, California, on Saturday, May 1, 1954.

By invitation of the Committee to Select Hour Speakers for Far Western Sectional Meetings, Professor P. A. White of the University of Southern California will deliver an address entitled Regular convergence at 11:00 A.M.

Sessions for contributed papers will be held at 9:30 A.M. and at 2:00 P.M.

Registration and all sessions will be held in the Camp Curry dining room. This room can be divided up in various manners, and the exact location of the different sessions will be conspicuously posted. Camp Curry is approximately two miles from Yosemite Lodge, where visitors will find meals and accommodations. Maps and Park information are obtainable at National Park Service Headquarters, near Yosemite Lodge.

Yosemite is 208 miles from San Francisco and 312 miles from Los Angeles. It is reached from Merced over Highway 140 and from Fresno over Highway 41. There is daily bus service from Merced (Round trip $9.00). Those desiring additional information concerning travel, tours, etc., should write the Yosemite Park and Curry Co., Yosemite National
Park, California.

It should be born in mind that at the time of the meeting, the temperature in Yosemite is such as to require fairly warm clothing, particularly in the early morning.

PROGRAM OF THE SESSIONS
(Time limit for each contributed paper 10 minutes)
Camp Curry Dining Room

SATURDAY, 9:30 A.M.

Session on Analysis and Applied Mathematics.

(1) An application of Sommerfeld’s complex order wave functions to antenna theory
   Dr. C. H. Papas, California Institute of Technology

(2) Discrete approximations to elliptic differential equations
   Dr. W. R. Wasow, National Bureau of Standards, Los Angeles

(3) Laplace transforms related to the theory of transverse waves in elasticity
   Dr. M. A. Dengler, Northrop Aircraft, Inc.

(4) The existence of solitary waves
   Professor K. O. Friedrichs, New York University, and Professor D. H. Hyers, University of Southern California

(5) On properties of minimal domains
   Mr. Michael Maschler, Stanford University and Hebrew University
      (Introduced by Professor Stefan Bergman)

(6) On integer valued entire functions
   Professor E. G. Straus, University of California, Los Angeles

Session on Algebra and Number Theory.

(7) Prime ideal theorems for rings, lattices, and Boolean algebras. Preliminary report.
   Mr. Dana Scott, University of California, Berkeley

(8) Prime ideal theorems for Boolean algebras and the axiom of choice. Preliminary report.
   Professor Alfred Tarski, University of California, Berkeley

(9) Metamathematical theorems equivalent to the prime ideal theorems for Boolean algebras. Preliminary report.
   Professor L. A. Henkin, University of California, Berkeley
(10) Some theorems on ordinal products of relations
    Mr. Chen-Chung Chang and Dr. Anne C. Davis, University of California, Berkeley.

(11) Some topological theorems equivalent to the Boolean prime ideal theorem. Preliminary report.
    Professor Herman Rubin, Stanford University, and Mr. Dana Scott, University of California, Berkeley.

(12) A remark on convex classes
    Mr. Chen-Chung Chang, University of California, Berkeley

SATURDAY, 11:00 A.M.

General Session

Regular convergence (one hour)
    Professor P. A. White, University of Southern California

SATURDAY, 2:00 P.M.

Session on Algebra and Number Theory.

(13) Sets of covering congruences
    Professor J. D. Swift, University of California, Los Angeles

(14) Unique factorization in multiplicative systems
    Professor R. D. James, University of British Columbia and Professor Ivan Niven, University of Oregon.

(15) Right alternative rings of characteristic two
    Dr. R. L. San Soucie, University of Oregon

(16) Dual symmetry of projective sets in a finite modular lattice
    Professor S. P. Avann, University of Washington

(17) Introduction to $C-R$ algebras
    Dr. C. J. Clark, Continental Oil Co. and Oklahoma A & M College

(18) Group extensions by left loops
    Dr. J. H. McKay, University of Washington

Session on Topology, Logic and Foundations.

(19) A non-Hausdorff, finest bicompact space
    Mr. Wendell Miller, University of California, Los Angeles
    (Introduced by Professor R. H. Sorgenfrey)

(20) Convergence topologies for measures
    Dr. Solomon Leader, Rutgers University

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(21) Some relational systems which generalize simply ordering relations
Dr. R. J. E. Fraïssé, University of Algiers and University of California, Berkeley
(Introduced by Professor Alfred Tarski)

(22) A foundational analysis of Lagrange's equations
Dr. A. C. Sugar, Ryan Aeronautical Co.

(23) Axiomatic analysis of the method of equal appearing intervals
Professor P. C. Suppes, Stanford University

SUPPLEMENTARY PROGRAM
(To be presented by title)

(24) The direct product of simple groups
Professor J. L. Brenner, State College of Washington

(25) Some properties of certain types of homogeneous continua
Professor C. E. Burgess, University of Utah

(26) Regular multiplications on spheres
Professor R. E. Chamberlin, University of Utah

(27) A generalization of the method of conjugate gradients for solving systems of linear algebraic equations
Professor J. H. Curtiss, New York University

(28) Some elementary properties of universal classes
Dr. R. J. E. Fraïssé, University of Algiers and University of California, Berkeley
(Introduced by Professor Alfred Tarski)

(29) A comparison fixed point theorem
Professor Barrett O'Neill, University of California, Los Angeles

(30) A note on two-place predicates and fitting sequences of measure functions
Professor Herman Rubin and Professor P. C. Suppes, Stanford University

(31) Inequalities for certain eigenvalues of a membrane of given area
Professor Gabor Szegö, Stanford University

Professor Alfred Tarski, University of California, Berkeley
(33) Prime ideal theorems for set algebras and ordering principles. Preliminary report
Professor Alfred Tarski, University of California, Berkeley

Titles and abstracts of papers intended for presentation before the Society should be addressed to the American Mathematical Society, 80 Waterman Street, Providence 6, Rhode Island. The deadline for inclusion in the program of any meeting and other details will be found under Official Communications on the back cover of current numbers of the Bulletin. Instructions for the preparation of abstracts are given on the abstract blanks which will be furnished to members on application to the Providence Office or one of the Secretaries.

In so far as correct information is available, the institution listed as the address of an author is that with which he is connected during the academic year, September 1, 1953 to July 1, 1954.

J. W. Green
Associate Secretary

Los Angeles, California
March 10, 1954

INTERNATIONAL CONGRESS OF MATHEMATICIANS 1954
General Information

The international Congress of Mathematicians will convene in Amsterdam, the Netherlands, from September 2nd to September 9th, 1954, under the auspices of Het Wiskundig Genootschap (the Mathematical Society of the Netherlands). The Congress will be open to all mathematicians.

The scientific program will include plenary sessions at which one hour invited addresses will be presented and sectional sessions in algebra and the theory of numbers, analysis, geometry and topology, probability and statistics, mathematical physics and applied mathematics, logic and foundations, and philosophy, history and education. The program of the sectional sessions will include half hour invited addresses and fifteen minute papers contributed by members of the Congress. A number of events, including several excursions, are being planned for entertainment.

Inquiries concerning the Congress should be addressed: Secretariat, International Congress of Mathematicians 1954, 2d Boerhaavestraat 49, Amsterdam, The Netherlands.
RESERVATION INFORMATION – YOSEMITE PARK MEETING

Requests for reservations should be mailed to:
Convention Department
Yosemite Park and Curry Co.
Yosemite National Park, California

Requests for reservations should state:
1. Accommodation requested (see description which follows).
2. Date and time of arrival and departure.
3. Names and addresses of members of party.
4. Name and address of applicant to whom confirmation should be sent.

A deposit of $5.00 per room should accompany application. Check should be made payable to Yosemite Park and Curry Co. Deposit will be refunded if notice of cancellation is received in Yosemite National Park at least 48 hours preceding arrival date.

Description of accommodations and rates: (rates quoted are per person per day, European plan—no meals included)

Pine and Oak Cottage rooms with private bath. New multiple type housing, radiant heat, twin beds. Maximum two persons in a room.
   One person per room—$8.00 per day   Two persons per room—$6.00 each

Pine Cottage rooms without private bath. Showers and toilets in same building, hot and cold running water. Twin beds.
   One person per room—$6.00.   Two persons per room—$4.00 each

Bungalow room with enclosed attached sleeping porch, private bath. Twin beds in each room. Electric heat. Minimum three persons to a unit.
   Three persons per unit—$4.00 each.   Four persons per unit—$3.50 each.

Housekeeping cabins without bath, toilets or running water. Oil heat. Maximum four persons per cabin in two double beds.
   One person per cabin—$3.50.   Additional person per cabin—$1.00 each.

Bungalow rooms with private bath, electric heat, twin beds in Yosemite Lodge Annex (Camp Curry). Double and single beds for 3 persons.
   One person per room—$6.00.   Two persons per room—$4.50 each.
   Three persons per room—$3.75 each.

Cabin rooms without bath, toilets or running water. Oil heat. Maximum four persons per cabin in two double beds.
   One person in room—$4.50.   Two persons per room—$2.75 each.
   Additional person per room—$1.00 each.

Convention Headquarters is at YOSEMITE LODGE. Cafeteria meal service is available.

Reservations will be filled in the order they are received. To avoid disappointment we suggest early reservation requests. Room reservations will be confirmed promptly by the Yosemite Park and Curry Co.

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EMPLOYMENT REGISTER

The Council and Board of Trustees have approved joining with the Mathematical Association of America in the establishment of an employment register on the limited basis described below. The register will consist of a listing of open positions. The listing will be available to prospective candidates at the April, Summer, and Annual Meetings. It is expected that many of the organizations listing openings will have representatives at these meetings to interview applicants. Standard application forms will be available as a convenience, but the responsibility of getting in touch with the employer will be left entirely in the hands of the interested individual. There will be no register of persons seeking positions.

Position descriptions should either be sent in advance of the meeting to the Associate Secretary in charge or handed in at the registration desk at the beginning of the meeting. It is not required that a position listing be in any set form, but blanks suitable for this purpose may be obtained either from the Headquarters of the Society, 80 Waterman Street, Providence 6, Rhode Island, or at the registration desk at the meeting.

One of the purposes the meetings of the Society and Association have traditionally served is that of enabling employers and candidates for positions to get together. The meetings have now become so large that it is no longer thought to be sufficient to leave the establishment of contacts entirely up to the parties directly concerned. The Employment Register has been planned to facilitate establishing such contacts with a minimum of machinery. It has been established on a trial basis. Its continuation will depend on how helpful it proves to be.
NOTES

The National Science Foundation has announced grants in mathematics to the following institutions, to support studies by the professors indicated: Brown University, Herbert Federer; Institute for Advanced Study, Hans Samelson; Lehigh University, Everett Pitcher; Princeton University, Alonzo Church.

A two-day Conference on Applications of Computing Machines will be held at Case Institute of Technology on April 13–14, 1954. For information and conference application blanks, write to: Dr. Fred C. Leone, Statistical Laboratory, Case Institute of Technology, 10900 Euclid Avenue, Cleveland 6, Ohio.

The Seventh Annual Heat Transfer and Fluid Mechanics Institute will be held at the University of California, Berkeley, on June 30, July 1 and 2, 1954. For further information contact H. A. Johnson, Division of Mechanical Engineering, 114 Engineering Building, University of California, Berkeley, California.

The Institute for the Unity of Science announces the following winners of its Essay Contest, Mathematical Logic as a Tool of Analysis: First Prize ($500), Dr. Bradford Dunham, Asheville, North Carolina; Second Prize ($200), Dr. Hans Freudenthal, Utrecht, Holland; Third Prize ($200), Professor Joseph Woodger, London, England.

Assistant Professor T. A. Botts of the University of Virginia is on leave and has received a Ford Foundation Grant.

Assistant Professor Mary P. Dolciani of Vassar College has been awarded a Faculty Fellowship by the Fund for the Advancement of Education and is studying at University College, London.

Rev. L. J. Heider of St. Louis University is on leave of absence at the University of Chicago, studying under a Horace Rackham Postdoctoral Fellowship given by the University of Michigan.

Professor H. R. Kingston, recently retired as Dean of Arts and Science, University of Western Ontario, has been awarded the honorary degree of Doctor of Laws by the University of Western Ontario.

Dr. Alexander Peyerimhoff, of the University of Giessen, has joined the research group at the University of Cincinnati, which is investigating the theory of Norlund means and its applications, under the sponsorship of the U. S. Air Force through the Office of Scientific Research, of the Air Research and Development Command Professor Konrad Knopp had to leave the group at the end of the first semester, on account of previous commitments. Dr. Wolfgang Jurkat will continue his work with the group, as well as Professors H. D. Lipsich and C. N. Moore, the latter two on a half time basis.
Professor P. E. Casas of the University of the Andes has been appointed to a professorship at the University of Colombia.

Dr. Mischa Cotlar of the University of Chicago has been appointed to a professorship at the University of Cuyo, Mendoza, Argentina.

Dr. H. G. Cohen has been appointed to an assistant professorship at the Carnegie Institute of Technology.

Dr. Stanley Fifer has accepted a position with the Midcentury Instrumentic Corporation, New York, New York.

Dr. R. S. Finn of the Institute for Advanced Study has been appointed a research associate at the Institute for Fluid Dynamics, University of Maryland.

Assistant Professor H. P. Galliher of the State Teachers College, New Haven, Connecticut, has accepted a position as analyst with Arthur D. Little, Inc., Cambridge, Massachusetts.

Professor E. J. Gumbel of Columbia University has been appointed to a visiting professorship of mathematical statistics at the Free University of Berlin for the summer term 1954, as part of the exchange program of Columbia University and the Free University, sponsored by the Ford Foundation.

Dr. M. A. Hyman, formerly a Fulbright Scholar in Holland, has accepted a position in the Atomic Power Division of the Westinghouse Electric Corporation.

Mr. Eric Korngold has accepted a position as junior engineer with North American Aviation, Inc., Los Angeles, California.

Dr. D. J. Lewis of the Institute for Advanced Study has been appointed to an assistant professorship at the University of Notre Dame.

Mr. J. E. McLaughy of the Vitro Corporation of America has accepted a position as mathematician with the Air Force Armament Center, Eglin Air Force Base, Florida.

Mr. M. A. Medick of the International Business Machines Corporation has been appointed a lecturer at City College, New York, New York.

Associate Professor W. H. L. Meyer, Jr. of the University of Chicago is on leave of absence and has been appointed to a visiting associate professorship at the University of California, Berkeley.

Mr. M. W. Milligan of the University of Illinois has been appointed to an assistant professorship at the Adams State College of Colorado, Alamosa, Colorado.

Professor Leopoldo Nachbin of the University of Brazil has accepted a position as research mathematician with the Institute for Numerical Analysis, Los Angeles, California.

Dr. James Pachares of the University of North Carolina has accept-
ed a position as mathematical statistician with the Naval Air Missile Test Center, Pt. Jugu, California.

Mr. W. J. Perry of the Pennsylvania State University has accepted a position as senior engineer with Sylvania Electronic Products, Incorporated, Mountain View, California.

Dr. M. M. Slotnick of the Humble Oil and Refining Company has accepted a position as consultant geophysicist with the Standard-Vacuum Oil Company, New York, New York.

Professor A. H. Taub of the University of Illinois is on leave of absence in Europe.

Associate Professor E. W. Titt of the University of Texas has been appointed to an associate professorship at the Oklahoma Agricultural and Mechanical College.

Mr. Eugene Usdin of the Stanolind Oil and Gas Company has accepted a position as manager of the Southwestern Computing Service, Tulsa, Oklahoma.

Dr. Jack Warga of Republic Aviation Corporation has accepted a position as senior mathematician with the Consolidated Engineering Corporation, Pasadena, California.

Dr. Karl Zeller of the University of Tübingen has been appointed a visiting lecturer at the University of Pennsylvania.

The following promotions are announced:

E. E. Floyd, University of Virginia, to an associate professorship.
I. H. Harris, Oklahoma Baptist University, to a professorship.
S. P. Hoffman, Jr., Polytechnic Institute of Brooklyn, to an assistant professorship.

Rufus Oldenburger, Woodward Governor Company, to director of research.

Robin Robinson, Dartmouth College, to director of the Great Issues Course.

S. M. Shah, Muslim University, to a professorship.

E. H. Spanier, University of Chicago, to an associate professorship.

The following appointments to instructorships are announced:

California State Polytechnic College: Dr. J. T. Culbertson; Johns Hopkins University: Dr Leon Ehrenpreis; Northwestern University: Mr. R. J. Nunke; Purdue University: Dr. J. K. Hale, Dr. R. W. McKelvey; University of Virginia: Mr. R. F. Williams.

Professor Emeritus L. E. Dickson of the University of Chicago died on January 17, 1954 at the age of 79 years. He had been a member of the Society for fifty-eight years.
Professor Emeritus A. O. Leuschner of the University of California, Berkeley, died April 22, 1953 at the age of eighty-five years. He had been a member of the Society for sixty-one years.

Mr. E. A. Miller of Ithaca, New York, died on July 8, 1953. He had been a member of the Society for fifty years.

NEW PUBLICATIONS


Bergmann, L. Schwingende Kristalle und ihre Anwendung in der Hochfrequenz- und Ultraschalltechnik. 3d ed. Stuttgart, Teubner, 1953. 52 pp., 51 diagrams. 2.60 DM.


Bowden, B. V. See Faster than thought.


de Broglie, L. See Duhem, P.


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Dubnov, Ya. S. *Ošibki v geometričeskikh dokazatel’stvah.* Moscow, Gosudarstvennoe Izdatel’stvo Tehniko-Teoretičeskoi Literatury, 1953. 68 pp. 95 rubles.


Fortet, R. See Blanc-Lapierre, A.


Howarth, L. See *Modern developments in fluid dynamics.*


Kampé de Fériet, J. See Blanc-Lapierre, A.

Kaprekar, D. R. *Cycles of recurring decimals.* Vol. II. (From \(N=167\) to 213 and many other numbers.) Devlali, Privately printed, 1953. 47 pp. 6 rupees.
Lev, J., and Walker, H. M.
Lietzmann, W. Der pythagoreische Lehrsatz. Mit einem Ausblick auf das Fermatsche Problem. 7th ed. Stuttgart, Teubner, 1953. 95 pp. 3,60 DM.
Lopez Nieto, A. See Belgrano, J.
Mostowski, A. See Tarski, A.
Nakano, H. Spectral theory in the Hilbert space. Tokyo, Japan Society for the Promotion of Science, 1953. 4+300 pp. $3.00
Pedoe, D. See Hodge, W. V. D.


Radok, J. R. M. See Muskhelishvili, N. I.

Robinson, R. M. See Tarski, A.


Smirnov, M. M. *Zadaci po uravneniyam matematiceskoi fiziki*. Moscow, Gosudarstvennoe Izdatel'stvo Tehniko-Teoreticheskoi Literatury, 1953. 72 pp. .90 rubles.


Urclay, J. M. See Belgrano, J. C.


Wiener, P. P. See Duhem, P.