

CAMBRIDGE PHILOSOPHICAL SOCIETY

AUTHOR INDEX

TO

PROCEEDINGS

OF THE  
CAMBRIDGE PHILOSOPHICAL  
SOCIETY

VOLUMES 51 TO 60  
(1955-64)

CAMBRIDGE  
1967



CAMBRIDGE PHILOSOPHICAL SOCIETY

AUTHOR INDEX  
TO  
PROCEEDINGS  
OF THE  
CAMBRIDGE PHILOSOPHICAL  
SOCIETY

VOLUMES 51 TO 60  
(1955-64)

CAMBRIDGE  
1967



## PREFACE

The first cumulative index to the Proceedings of the Cambridge Philosophical Society was published in 1961 and entitled Author Index to Proceedings of the Cambridge Philosophical Society Volumes 1 to 50, (1843–1954) and Transactions of the Cambridge Philosophical Society Volumes 1 to 23, (1822–1928). The index now published covers Proceedings for the years 1955–64 and it is proposed to issue further indexes every ten years.

Volumes 51–60 were published regularly, each volume having four parts issued in a single year. The arrangement in this index varies from the first index in two respects. A paper written by two or more authors is indexed in full under each author. The arrangement of papers under an author's name is strictly chronological and ignores joint authors' names.

The Society is most grateful to its librarian, Miss J. E. Larter and her staff for compiling this index.



## INDEX OF AUTHORS

- ABBOTT, M. R. A theory of the propagation of bores in channels and rivers. **52** (1956), 344–362
- ABLAN, S. & BARNETT, I. A. Some properties of skew-symmetric elements of a ring. **53** (1957), 549–553
- ABUBAKAR, I. Scattering of plane elastic waves at rough surfaces. I. **58** (1962), 136–157  
 Scattering of plane elastic waves at rough surfaces. II. **59** (1963), 231–248
- ADAMS, J. F. An example in homotopy theory. **53** (1957), 922–923  
 A finiteness theorem in homological algebra. **57** (1961), 31–36.  
 On Chern characters and the structure of the unitary group. **57** (1961), 189–199
- ADAMS, J. F. & WALKER, G. An example in homotopy theory. **60** (1964), 699–700
- ADKINS, J. E. A note on the finite plane-strain equations for isotropic incompressible materials. **51** (1955), 363–367
- AFRIAT, S. N. Simultaneous linear differential equations with constant coefficients. **52** (1956), 209–212  
 The approach to scalar growth of a vector transformed by an increasing power of a matrix. **52** (1956), 213–214  
 Orthogonal and oblique projectors and the characteristics of pairs of vector spaces. **53** (1957), 800–816  
 Analytic functions of finite dimensional linear transformations. **55** (1959), 51–61  
 The system of inequalities  $a_{rs} > X_r - X_s$ . **59** (1963), 125–133  
 Gradient configurations and quadratic functions. **59** (1963), 287–305
- AFZAL AHMAD & LAKSHMIKANTH, V. On self-reciprocal functions for Fourier–Bessel integral transforms. **57** (1961), 778–781
- AHMAD, A. *See* AFZAL AHMAD
- ÅKERBERG, B. A variant on the proofs of some inequalities. **57** (1961), 184–186  
 Proof of Poisson’s formula. **57** (1961), 186
- AKUTOWICZ, E. J. The spectral resolution of Watson transforms. **54** (1958), 368–376
- ALBASINY, E. L. The use of associated Legendre polynomials for interpolation. **57** (1961), 288–303
- ALGUNEID, A. R. Analytical degeneration of complete twisted cubics. **52** (1956), 202–208
- ALLAN, D. W. On the behaviour of systems of coupled dynamos. **58** (1962), 671–693
- ALLAN, R. R. & WARD, G. N. Planetary equations in terms of vectorial elements. **59** (1963), 669–677
- ALTMANN, S. L. On the symmetries of spherical harmonics. **53** (1957), 343–367  
 Equivalent functions: hybrids and Wannier functions. **54** (1958), 197–206
- ARMSTRONG, RUTH. Finite groups in which any two subgroups of the same order are isomorphic. **54** (1958), 18–27
- ARTHURS, A. M. The mathematical equivalence of the Born approximation and the method of impact parameters. **57** (1961), 904–905
- ASPLUND, E., GROSSWALD, E. & GRÜNBAUM, B. On a measure of asymmetry of convex bodies. **58** (1962), 217–220
- ATIYAH, M. F. & TODD, J. A. On complex Stiefel manifolds. **56** (1960), 342–353
- ATIYAH, M. F. Bordism and cobordism. **57** (1961), 200–208
- ATIYAH, M. F. & HIRZEBRUCH, F. Bott periodicity and the parallelizability of the spheres. **57** (1961), 223–226
- BAGLEY, R. W. A characterization of compact regular spaces. **57** (1961), 430–431
- BAINES, M. J. Transport properties of thin metallic films. **57** (1961), 606–622
- BAKER, J. W. & PETERSEN, G. M. Inclusion of sets of regular summability matrices. **60** (1964), 705–712

- BALLINGER, R. A. & MARCH, N. H. Molecules with tetrahedral and octahedral symmetry. II. Energy calculations and molecular constants for methane, silane and germane. **51** (1955), 504-516
- Molecules with tetrahedral and octahedral symmetry. III. Theoretical basis of the 'smoothing approximation'. **51** (1955), 517-518
- Angular terms in the electron density for the phosphine molecule. **52** (1956), 703-711
- BAMBAH, R. P. Polar reciprocal convex bodies. **51** (1955), 377-378
- BANYARD, K. E. & MARCH, N. H. Molecules with tetrahedral and octahedral symmetry. V. The electron distribution in  $\text{CCl}_4$ . **52** (1956), 280-286
- BARNES, E. S. On a theorem of Voronoi. **53** (1957), 537-539
- BARNETT, I. A. & ABIAN, S. Some properties of skew-symmetric elements of a ring. **53** (1957), 549-553
- BARNETT, V. D. Some explicit results for an asymmetric two-dimensional random walk. **59** (1963), 451-462
- BARRETT, W. On the numerical evaluation of some definite integrals. **60** (1964), 75-82
- BARTHOLOMEUSZ, E. F. The reflexion of long waves at a step. **54** (1958), 106-118
- BARTLETT, M. S. Equations for stochastic path integrals. **57** (1961), 568-573
- BASSALI, W. A. & DAWOUD, R. H. Bending of a circular plate with an eccentric circular patch symmetrically loaded with respect to its centre. **52** (1956), 584-598
- BASSALI, W. A. Bending of an elastically restrained circular plate under a linearly varying load over an eccentric circle. **52** (1956), 734-741
- Transverse bending of a thin circular plate loaded normally over an eccentric circle. **52** (1956), 742-749
- Transverse bending of infinite and semi-infinite thin elastic plates. I. **53** (1957), 248-255
- Thin circular plates supported at several points along the boundary. **53** (1957), 525-535
- The transverse flexure of thin elastic plates supported at several points. **53** (1957), 728-743
- The transverse flexure of thin perforated elastic plates supported at several points. **53** (1957), 744-754
- BASSALI, W. A. & DAWOUD, R. H. Green's functions for thin isotropic plates containing holes. **53** (1957), 755-763
- BASSALI, W. A. Problems concerning the bending of isotropic thin elastic plates subject to various distributions of normal pressures. **54** (1958), 265-287
- BASSALI, W. A. & NASSIF, M. Transverse bending of infinite and semi-infinite thin elastic plates. III. **54** (1958), 288-299
- A thin circular plate normally and uniformly loaded over a concentric elliptic patch. **55** (1959), 101-109
- BASSALI, W. A. Bending of a thin circular plate under hydrostatic pressure over a concentric ellipse. **55** (1959), 110-120
- The analysis of singularly loaded and rigidly clamped thin elastic slabs with curvilinear boundaries. I. **55** (1959), 121-136
- BASSALI, W. A. & GORGUI, M. A. Flexural problems of circular ring plates and sectorial plates. I. **56** (1960), 75-95
- Flexural problems of circular ring plates and sectorial plates. II. **56** (1960), 414-424
- BASSALI, W. A. & HANNA, N. O. M. Bending of curvilinear and rectilinear polygonal plates symmetrically loaded over a concentric circle. **57** (1961), 166-179
- BASTIN, E. W. & KILMISTER, C. W. The concept of order. II. Measurements. **51** (1955), 454-468
- The concept of order. III. General relativity as a technique for extrapolating over great distances. **53** (1957), 462-472
- The concept of order. IV. Quantum mechanics. **55** (1959), 66-81
- BASTIN, E. W. The idea of size in large-scale physics. **57** (1961), 848-850
- BASTIN, J. A. An extension of the Newtonian law of gravitation. **56** (1960), 401-409
- BACHELOR, G. K. A correction to the paper 'The effect of homogeneous turbulence on material lines and surfaces'. (Appendix to the paper by W. H. Reid On the stretching of material lines and surfaces in isotropic turbulence with zero fourth cumulants.) **51** (1955), 361-362
- BATHER, J. A. Bayes procedures for deciding the sign of a normal mean. **58** (1962), 599-620



- BAUMSLAG, G. A theorem on infinite groups. **53** (1957), 545–548  
 Wreath products and  $p$ -groups. **55** (1959), 224–231  
 Roots and wreath products. **56** (1960), 109–117
- BAXTER, R. J. Statistical mechanics of a one-dimensional Coulomb system with a uniform charge background. **59** (1963), 779–787
- BEARD, D. W. & WALTERS, K. Elastico-viscous boundary-layer flows. I. Two-dimensional flow near a stagnation point. **60** (1964), 667–674
- BEARDWOOD, JILLIAN, HALTON, J. H. & HAMMERSLEY, J. M. The shortest path through many points. **55** (1959), 299–327
- BEEBY, J. L. The propagator for a particle in the presence of a one-dimensional square-well potential. **59** (1963), 607–613
- BEINEKE, L. W., HARARY, F. & MOON, J. W. On the thickness of the complete bipartite graph. **60** (1964), 1–5
- BELINFANTE, D. C. On viscous flow in a pipe with constrictions. **58** (1962), 405–416
- BELLMAN, R. On a generalization of the fundamental identity of Wald. **53** (1957), 257–259
- BENADO, M. Bemerkungen zur Theorie der Vielverbände. IV. Über die Möbius'sche Funktion. **56** (1960), 291–317
- BENNETT, B. M. On a certain multivariate non-normal distribution. **57** (1961), 434–436
- BERNAU, S. J. & SMITHIES, F. A note on normal operators. **59** (1963), 727–729
- BERSTEIN, I. On the 1-dimensional category of Cartesian products. **56** (1960), 425–426  
 A note on spaces with non-associative co-multiplication. **60** (1964), 353–354
- BESICOVITCH, A. S. On the definition of tangents to sets of infinite linear measure. **52** (1956), 20–29  
 Analysis of tangential properties of curves of infinite length. **53** (1957), 69–72  
 On families of domains. **53** (1957), 73–75  
 On homeomorphism of perfect plane sets. **54** (1958), 168–186  
 On diagonal values of probability vectors of infinitely many components. **57** (1961), 759–766  
 A problem on measure. **59** (1963), 251–253  
 Two problems on convergence. **59** (1963), 253–255  
 On one-sided densities of arcs of positive two-dimensional measure. **60** (1964), 517–524
- BETHE, H. A., DALITZ, R. H. & SUNDARESEN, M. K. A singular integral equation in the theory of meson-nucleon scattering. **52** (1956), 251–272
- BHARGAVA, R. D. & JASWON, M. A. Two-dimensional elastic inclusion problems. **57** (1961), 669–680
- BHARGAVA, R. D. & RADHAKRISHNA, H. C. Two-dimensional elliptic inclusions. **59** (1963), 811–820  
 Elliptic inclusions in a stressed matrix. **59** (1963), 821–832
- BHARGAVA, R. D. & KAPOOR, O. P. Circular inclusion in an infinite elastic medium with a circular hole. **60** (1964), 675–682
- BHATTACHARYA, P. B. The Hilbert function of two ideals. **53** (1957), 568–575
- BICKLEY, W. G. & MCNAMEE, J. Eigenvalues and eigenfunctions of finite-difference operators. **57** (1961), 532–546
- BIGG, M. D. The minimization of a general function subject to a set of non-linear constraints. **59** (1963), 523–530
- BIRCH, B. J. On games with almost complete information. **51** (1955), 275–287  
 Another transference theorem of the geometry of numbers. **53** (1957), 269–272  
 A grid with no split parallelepiped. **53** (1957), 536
- BIRCH, B. J. & DAVENPORT, H. Quadratic equations in several variables. **54** (1958), 135–138
- BIRCH, B. J. On  $3N$  points in a plane. **55** (1959), 289–293  
 Note on a problem of Erdős. **55** (1959), 370–373  
 Waring's problem in algebraic number fields. **57** (1961), 449–459
- BLACKBURN, N. On prime-power groups in which the derived group has two generators. **53** (1957), 19–27  
 On prime-power groups with two generators. **54** (1958), 327–337
- BLACKBURN, W. S. Second-order effects in the flexure of isotropic incompressible elastic cylinders. **53** (1957), 907–921

- BOARDMAN, J. M. Some embeddings of 2-spheres in 4-manifolds. **60** (1964), 354-356
- BODMER, W. F. On the convergence of iterative processes for the solution of simultaneous equations in several variables. **56** (1960), 286-289
- BODMER, W. F. A method of evaluating the complex zeros of polynomials using polar coordinates. **58** (1962), 52-56
- BOLTON, H. C. & SCOINS, H. I. Eigenvalues of differential equations by finite-difference methods. **52** (1956), 215-229  
Eigenvalue problems treated by finite-difference methods. II. Two-dimensional Schrödinger equations. **53** (1957), 150-161
- BONDI, H. & MCCREA, W. H. Energy transfer by gravitation in Newtonian theory. **56** (1960), 410-413
- BORN, M. & HOOTON, D. J. Statistical dynamics of multiply-periodic systems. **52** (1956), 287-300
- BORWEIN, D. On a scale of Abel-type summability methods. **53** (1957), 318-322  
On methods of summability based on integral functions. **55** (1959), 23-30  
On methods of summability based on integral functions. II. **56** (1960), 125-131
- BOYER, R. H. An application of harmonic coordinates in general relativity. **59** (1963), 835-836
- BREARLEY, M. N. The motion of a biased bowl with perturbing projection conditions. **57** (1961), 131-151  
The number of real zeros of the solution of a linear homogeneous differential equation. **57** (1961), 693-694
- BROADBENT, S. R. A measure of dispersion applied to cosmic-ray and other problems. **52** (1956), 499-513
- BROADBENT, S. R. & HAMMERSLEY, J. M. Percolation processes. I. Crystals and mazes. **53** (1957), 629-641
- BROWDER, W. Some additive cohomology operations which are not suspensions. **57** (1961), 50-54
- BROWN, A. L. A note concerning invariant subspaces of a bounded linear operator on a Banach space. **54** (1958), 557-559
- BROWN, L. J. M. On conformal mappings of domains of infinite connectivity. **51** (1955), 56-64
- BROWN, R. On Künneth suspensions. **60** (1964), 713-720
- BROWN, S. N. The effect of heat transfer on boundary-layer growth. **59** (1963), 789-802
- BROWN, T. C. On the finiteness of semigroups in which  $x^r = x$ . **60** (1964), 1028-1029
- BROWN, W. B. Adiabatic second-order energy derivatives in quantum mechanics. **54** (1958), 251-257
- BRUCKSHAW, J. MCG. & VINCENZ, S. A. Note on the probability distribution of a small number of vectors. **56** (1960), 21-26
- BRUDNO, S. A further example of  $A^4 + B^4 + C^4 + D^4 = E^4$ . **60** (1964), 1027-1028
- BRUSH, S. G. A simplified method for integrating over Feynman histories. **53** (1957), 651-653
- BUCHDAHL, H. A. Non-linear Lagrangians and Palatini's device. **56** (1960), 396-400
- BUCKINGHAM, A. D. & POPLÉ, J. A. The polarization of a hydrogen atom in combined electric and magnetic fields. **53** (1957), 262-264
- BUDDEN, K. G. & CLEMMOW, P. C. Coupled forms of the differential equations governing radio propagation in the ionosphere. II. **53** (1957), 669-682
- BULLARD, E. C. The stability of a homopolar dynamo. **51** (1955), 744-760
- BULLARD, E. C., MASON, C. S. & MUDIE, J. D. Curious behaviour of a proton magnetometer. **60** (1964), 287-293
- BURGESS, D. C. J. Generalized intervals in partially ordered groups. **55** (1959), 165-171  
Note on the preceding paper. [Completely simple and inverse semigroups by R. McFadden and H. Schneider.] **57** (1961), 237-238
- BURKILL, H. On Riesz and Riemann summability. **57** (1961), 55-60
- BURKILL, J. C. An integral for distributions. **53** (1957), 821-824
- CADE, R. The charge density near a sharp point on a conductor. **53** (1957), 870-877
- CALDOW, G. L. & COULSON, C. A. Lower-bound energies and the virial theorem in wave mechanics. **57** (1961), 341-347
- CANNON, J. R. & HALTON, J. H. The irrotational solution of an elliptic differential equation with an unknown coefficient. **59** (1963), 680-682

- CAPILDEO, R. The kinematics of inertial frames. **57** (1961), 321–329
- CARLITZ, L. Some arithmetic properties of the Legendre polynomials. **53** (1957), 265–268
- CARTER, G. W., LOH, S. C. & PO, C. Y. K. The field of current in a thin wire ring. **60** (1964), 613–619
- CASSELS, J. W. S. Bounds for the least solutions of homogeneous quadratic equations. **51** (1955), 262–264  
 Bounds for the least solutions of homogeneous quadratic equations. (*Addendum.*) **52** (1956), 604  
 Note on quadratic forms over the rational field. **55** (1959), 267–270  
 On the equation  $a^x - b^y = 1$ . II. **56** (1960), 97–103  
 On the equation  $a^x - b^y = 1$ . II. (*Corrigendum.*) **57** (1961), 187  
 Note on quadratic forms over the rational field. (*Addendum.*) **57** (1961), 697
- CATTON, DIANA & MILLIS, B. G. Numerical evaluation of the integral

$$\frac{1}{2\pi} \int_{-i\infty}^{+i\infty} (\lambda x^3 + x^2 - 1)^{-\frac{1}{2}} e^{-\alpha\omega} d\alpha$$

**54** (1958), 454–462

- CHADWICK, P. & POWDRILL, B. Application of the Laplace transform method to wave motions involving strong discontinuities. **60** (1964), 313–324
- CHAMBERS, R. G. The penetration depth in impure super-conducting tin. **52** (1956), 363–375
- CHANDRASEKHAR, S. The character of the equilibrium of an incompressible heavy viscous fluid of variable density. **51** (1955), 162–178
- CERRY, T. M. On Kepler's equation. **51** (1955), 81–91
- CHESTER, C., FRIEDMAN, B. & URSELL, F. An extension of the method of steepest descents. **53** (1957), 599–611
- CHISHOLM, J. S. R. & DE BORDE, A. H. A new derivation of the fundamental formulae in Fowlerian statistical mechanics. **51** (1955), 526–528
- CLEMMOW, P. C. & WILLSON, A. J. A relativistic form of Boltzmann's transport equation in the absence of collisions. **53** (1957), 222–225
- CLEMMOW, P. C. & BUDDEN, K. G. Coupled forms of the differential equations governing radio propagation in the ionosphere. II. **53** (1957), 669–682
- CLEMMOW, P. C. An infinite Legendre integral transform and its inverse. **57** (1961), 547–560
- CLENSHAW, C. W. & OLVER, F. W. J. The use of economized polynomials in mathematical tables. **51** (1955), 614–628
- CLENSHAW, C. W. The numerical solution of linear differential equations in Chebyshev series. **53** (1957), 134–149
- COCHRAN, W. A suggested experiment on the clock paradox. **53** (1957), 646–650
- COCKCROFT, W. H. On the Thom isomorphism theorem. **58** (1962), 206–208
- COHAN, NORAH V. The spherical harmonics with the symmetry of the icosahedral group. **54** (1958), 28–38
- COHEN, D. E. On the Adem relations. **57** (1961), 265–267  
 A topological proof in group theory. **59** (1963), 277–282
- COHEN, M. & COULSON, C. A. Single-centre expansions for the hydrogen molecular ion. **57** (1961), 96–106
- COHEN, M. Single-centre expansions for the hydrogen molecular ion. II. **58** (1962), 130–135
- COHN, P. M. A non-nilpotent Lie ring satisfying the Engel condition and a non-nilpotent Engel group. **51** (1955), 401–405  
 On a generalization of the Euclidean algorithm. **57** (1961), 18–30  
 Factorization in non-commutative power series rings. **58** (1962), 452–464
- COLE, A. J. & SWIERCZKOWSKI, S. On a class of non-measurable groups. **57** (1961), 227–229
- COLES, W. J. On a theorem of Van der Corput on uniform distribution. **53** (1957), 781–789
- COLLINGWOOD, E. F. & LOHWATER, A. J. Applications of the theory of cluster sets to a class of meromorphic functions. **53** (1957), 93–105
- COLLINS, W. D. Note on the electrified spherical cap. **55** (1959), 377–379  
 On some dual series equations and their application to electrostatic problems for spheroidal caps. **57** (1961), 367–384  
 Note on an electrified circular disk situated inside an earthed coaxial infinite hollow cylinder. **57** (1961), 623–627

- COLLINSON, C. D. A class of conserved tensors in an arbitrary gravitational field. **58** (1962), 346-362  
 Symmetry properties of Harrison space-times. **60** (1964), 259-263
- CONWAY, J. H. Mrs Perkins's quilt. **60** (1964), 363-368
- CONWAY, J. H. & CROFT, H. T. Covering a sphere with congruent great-circle arcs. **60** (1964), 787-800
- COPEL, W. A. The solution of equations by iteration. **51** (1955), 41-43  
 Note on an equation of boundary-layer theory. **57** (1961), 696
- CORINALDESI, E. & ZIENAU, S. On an inequality for the momentum derivative of the scattering phase. **52** (1956), 599-600
- CORNER, A. L. S. A note on rank and direct decompositions of torsion-free Abelian groups. **57** (1961), 230-233  
 Wildly embedded subgroups of complete direct sums of cyclic groups. **59** (1963), 249-251
- COSSAR, J. Hilbert transforms and almost periodic functions. **56** (1960), 354-366
- COULSON, C. A. & MARCH, N. H. Molecules with tetrahedral and octahedral symmetry. IV. A modified Thomas-Fermi scheme for molecules with heavy atoms in the outer positions. **52** (1956), 114-118
- COULSON, C. A. & COHEN, M. Single-centre expansions for the hydrogen molecular ion. **57** (1961), 96-106
- COULSON, C. A. & CALDOW, G. L. Lower-bound energies and the virial theorem in wave mechanics. **57** (1961), 341-347
- COX, D. R. A use of complex probabilities in the theory of stochastic processes. **51** (1955), 313-319  
 The analysis of non-Markovian stochastic processes by the inclusion of supplementary variables. **51** (1955), 433-441
- CRAGGS, J. W. On two-dimensional waves in an elastic half-space. **56** (1960), 269-285  
 On axially symmetric waves. I. Linearized compressible flow with axial boundary conditions. **59** (1963), 637-654  
 On axially symmetric waves. II. The treatment of a plane boundary. **59** (1963), 655-667  
 On axially symmetric waves. III. Elastic waves in a half-space. **59** (1963), 803-809
- CROFT, H. T. A problem on tangents to a sphere. **57** (1961), 685-686
- CROFT, H. T. & FOWLER, M. On a problem of Steinhaus about polygons. **57** (1961), 686-688
- CROFT, H. T. Two problems on convex bodies. **58** (1962), 1-7  
 On the sum of differentiable functions. **58** (1962), 225-228  
 Some plane curve pathologies. **58** (1962), 569-574
- CROFT, H. T. & SWINNERTON-DYER, H. P. F. On the Steinhaus billiard table problem. **59** (1963), 37-41
- CROFT, H. T. & CONWAY, J. H. Covering a sphere with congruent great-circle arcs. **60** (1964), 787-800
- CURTIS, M. L. Shrinking continua in 3-space. **57** (1961), 432-433
- DALITZ, R. H., BETHE, H. A. & SUNDARESEN, M. K. A singular integral equation in the theory of meson-nucleon scattering. **52** (1956), 251-272
- DAS, S. C. The numerical evaluation of a class of integrals. II. **52** (1956), 442-448
- DAVENPORT, H. Note on a theorem of Cassels. **53** (1957), 539-540
- DAVENPORT, H. & BIRCH, B. J. Quadratic equations in several variables. **54** (1958), 135-138
- DAVIES, H. Summation over Feynmann histories: the free particle and the harmonic oscillator. **53** (1957), 199-205  
 Hamiltonian approach to the method of summation over Feynman histories. **59** (1963), 147-155
- DAVIES, R. O. A property of Hausdorff measure. **52** (1956), 30-34  
 A note on linear derivatives of measurable functions. **52** (1956), 153-155  
 Non  $\sigma$ -finite closed subsets of analytic sets. **52** (1956), 174-177  
 On a problem of Erdős concerning decompositions of the plane. **59** (1963), 33-36  
 On a denumerable partition problem of Erdős. **59** (1963), 501-502
- DAVIS, A. M. J. Small disturbances in a conducting fluid in the presence of a current-carrying conductor. **60** (1964), 325-339
- DAVIS, T. A. The Wiener-Pitt phenomenon on semi-groups. **59** (1963), 11-24

- DAWOU, R. H. & BASSALI, W. A. Bending of a circular plate with an eccentric circular patch symmetrically loaded with respect to its centre. **52** (1956), 584–598  
 Green's functions for thin isotropic plates containing holes. **53** (1957), 755–763
- DE, S. C. Contributions to the theory of Stokes waves. **51** (1955), 713–736  
 Kinematic wave theory of bottlenecks of varying capacity. **52** (1956), 564–572
- DEAN, P. The spectral distribution of a Jacobian matrix. **52** (1956), 752–755  
 The vibrations of three two-dimensional lattices. **59** (1963), 383–396  
 A new Monte Carlo method for percolation problems on a lattice. **59** (1963), 397–410
- DE BARRA, G. The convergence of a sum of independent random variables. **59** (1963), 411–416
- DE BORDE, A. H. & CHISHOLM, J. S. R. A new derivation of the fundamental formulae in Fowlerian statistical mechanics. **51** (1955), 526–528
- DENNIS, S. C. R. & POOTS, G. The solution of linear differential equations. **51** (1955), 422–432
- DENNIS, S. C. R. The numerical integration of ordinary differential equations possessing exponential type solutions. **56** (1960), 240–246  
 $h^2$ - and  $h^4$ -extrapolation in eigenvalue problems. **60** (1964), 67–74
- DESBROW, D. On connexion, invariance and stability in certain flows. **60** (1964), 51–55
- DEUTSCH, J. P. A. Rearrangeable three-stage Clos connecting networks. **60** (1964), 939–948
- DIANANDA, P. H. The central limit theorem for  $m$ -dependent variables. **51** (1955), 92–95  
 On a theorem of L. J. Mordell. **57** (1961), 682–685  
 On non-negative forms in real variables some or all of which are non-negative. **58** (1962), 17–25  
 On rearrangement of series. **58** (1962), 158–159  
 Some cyclic and other inequalities. **58** (1962), 425–427  
 Some cyclic and other inequalities. II. **58** (1962), 703–705  
 On some inequalities of H. Kober. **59** (1963), 341–346  
 On some inequalities of H. Kober. (*Addendum*.) **59** (1963), 837–839
- DIXMIER, J. Sur les algèbres dérivées d'une algèbre de Lie. **51** (1955), 541–544
- DOMB, C. & FISHER, M. E. On iterative processes and functional equations. **52** (1956), 652–662  
 On random walks with restricted reversals. **54** (1958), 48–59
- DOUGLAS, A. J. A homological characterization of certain Abelian groups. **57** (1961), 256–264
- DOUGLAS, A. S., HARTREE, D. R. & RUNCIMAN, W. A. Atomic wave functions for gold and thallium. **51** (1955), 486–503
- DOUGLAS, A. S. On the Sturm–Liouville equation with two-point boundary conditions. **52** (1956), 636–639  
 A method of improving energy-level calculations for 'series' electrons. **52** (1956), 687–692  
 On the numerical solution of a class of partial differential equations. **54** (1958), 214–218
- DOUGLAS, A. S. & GARSTANG, R. H. Transition integrals for Si IV and Ca II. **58** (1962), 377–381
- DRAZIN, P. G. On stability of parallel flow of an incompressible fluid of variable density and viscosity. **58** (1962), 646–661
- DUGUID, A. M. & McLAIN, D. H.  $FC$ -nilpotent and  $FC$ -soluble groups. **52** (1956), 391–398
- DUNGEY, J. W. Deductions from the perfect cosmological principle. **51** (1955), 532–535
- DUTY, R. L. A note on the Stokes phenomenon. **58** (1962), 706–708
- DVORETZKY, A., ERDŐS, P., KAKUTANI, S. & TAYLOR, S. J. Triple points of Brownian paths in 3-space. **53** (1957), 856–862
- EDELSTEIN, L. A. On the one centre expansion of scattered distorted spherical and hyper-spherical waves. **59** (1963), 185–196  
 On the one-centre expansion of Meijer's  $G$ -function. **60** (1964), 533–538  
 On the one-region two-centre expansions of a generalized Coulomb field in spherical polar and parabolic coordinates. **60** (1964), 543–546
- EDELSTEIN, M. On non-expansive mappings of Banach spaces. **60** (1964), 439–474
- EDGE, W. L. The simple group of order 6048. **56** (1960), 189–204  
 A second note on the simple group of order 6048. **59** (1963), 1–9  
 Fundamental figures, in four and six dimensions, over  $GF(2)$ . **60** (1964), 183–195
- EDWARDS, D. A. & MOYAL, J. E. Stochastic differential equations. **51** (1955), 663–677
- EGGLESTON, H. G. Tangential properties of Fréchet surfaces. **54** (1958), 187–196  
 On covering a regular polygon with a triangle. **58** (1962), 8–11

- EHRMAN, J. B. On the unitary irreducible representations of the universal covering group of the  $3+2$  deSitter group. **53** (1957), 290–303
- ELCOCK, E. W. The cooperative behaviour of a two-dimensional defect crystal. **53** (1957), 863–869
- EL GAZZY, E. M. & MELIGY, A. S. On Coulomb wave functions. **59** (1963), 89–94  
 On the function  $\int_z^\infty e^{-t} t^{-n} dt$ . **59** (1963), 735–737
- ELIEZER, C. J. A consistency condition for electron wave functions. **54** (1958), 247–250
- ELIEZER, C. J. & ROY, S. K. The effect of a magnetic pole on the energy levels of a hydrogen-like atom. **58** (1962), 401–404
- ELLIOTT, D. A method for the numerical integration of the one-dimensional heat equation using Chebyshev series. **57** (1961), 823–832
- ELLIS, J. R. The fields of an arbitrarily moving dipole. **59** (1963), 759–774
- ELTON, L. R. B. On the infinity in the second Born approximation for the Coulomb field. **51** (1955), 333–343
- ENGLAND, A. H. A punch problem for a transversely isotropic layer. **58** (1962), 539–547
- ENGLAND, A. H. & GREEN, A. E. Some two-dimensional punch and crack problems in classical elasticity. **59** (1963), 489–500
- ENNOLA, V. On a problem about the Epstein zeta-function. **60** (1964), 855–875
- EPSTEIN, D. B. A. Linking spheres. **56** (1960), 215–219
- ERDŐS, P., DVORETSKY, A., KAKUTANI, S. & TAYLOR, S. J. Triple points of Brownian paths in 3-space. **53** (1957), 856–862
- ERDŐS, P. & TAYLOR, S. J. On the Hausdorff measure of Brownian paths in the plane. **57** (1961), 209–222
- EZEILO, J. O. C. On the existence of periodic solutions of a certain third-order differential equation. **56** (1960), 381–389  
 Further results for the solutions of a third-order differential equation. **59** (1963), 111–116
- FAIRLIE, D. B. The Fredholm solution as the limit for a sum of separable potentials. **56** (1960), 182–185  
 An inequality in Feynman integrands. **59** (1963), 157–160  
 The formulation of quantum mechanics in terms of phase space functions. **60** (1964), 581–586
- FAN, KY. *See* KY FAN
- FARAHAT, H. K. & MIRSKY, L. Permutation endomorphisms and refinement of a theorem of Birkhoff. **56** (1960), 322–328
- FIELDHOUSE, M. The saddle-points of the confluent hypergeometric function  $M(a, b; x)$ . **56** (1960), 148–153
- FIELDS, J. L. & WIMP, J. Basic series corresponding to a class of hypergeometric polynomials. **59** (1963), 599–605
- FINE, M. & HEAD, J. W. A note on the convergence of multi-point Taylor's series. **58** (1962), 548–550  
 A note on multi-point Laurent–Taylor series. **60** (1964), 172–174
- FISHER, M. E. & DOMB, C. On iterative processes and functional equations. **52** (1956), 652–662
- FISHER, M. E. On the continuous solution of integral equations by an electronic analogue. I. **53** (1957), 162–174
- FISHER, M. E. & DOMB, C. On random walks with restricted reversals. **54** (1958), 48–59
- FISHER, M. E. & FULLER, A. T. On the stabilization of matrices and the convergence of linear iterative processes. **54** (1958), 417–425
- FISHER, M. E. & ZUCKER, I. J. On a non-linear differential equation for the zero-point energies of the rare gas solids. **57** (1961), 107–114
- FLAVIN, J. N. Thermo-elastic Rayleigh waves in a prestressed medium. **58** (1962), 532–538
- FLETT, T. M. Some theorems on fractional integrals. **55** (1959), 31–50
- FLORIDES, P. S. Applications of Møller's theory on energy and its localization in general relativity. **58** (1962), 102–109  
 The electromagnetic energy and the gravitational mass of a charged particle in general relativity. **58** (1962), 110–118

- FORD, F. The calculation of the electromagnetic field in an Alvarez type linear accelerator. **56** (1960), 252-268
- FOWLER, J. A note on cubic equations. **58** (1962), 165-169
- FOWLER, M. & CROFT, H. T. On a problem of Steinhaus about polygons. **57** (1961), 686-688
- FOX, C. Some applications of Mellin transforms to the theory of bivariate statistical distributions. **53** (1957), 620-628
- Power series with non-integral exponents which are Fourier kernels. **57** (1961), 274-280
- Integral transforms based upon fractional integration. **59** (1963), 63-71
- FOXLEY, E. Testing the independence of a system of axioms, using a logical computer. **57** (1961), 443-448
- FRANKLIN, J. & FRIEDMAN, B. A convergent asymptotic representation for integrals. **53** (1957), 612-619
- FRIEDLANDER, F. G. Sound pulses in a conducting medium. **55** (1959), 341-367
- FRIEDMAN, B., CHESTER, C. & URSELL, F. An extension of the method of steepest descents. **53** (1957), 599-611
- FRIEDMAN, B. & FRANKLIN, J. A convergent asymptotic representation for integrals. **53** (1957), 612-619
- FRIEDMAN, B. Eigenvalues of composite matrices. **57** (1961), 37-49
- FROESE, CHARLOTTE. The self-consistent field with exchange for some 10 and 12 electron systems. **53** (1957), 206-213
- FROESE, CHARLOTTE & HARTREE, D. R. Wave functions for the normal states of  $\text{Ne}^{+3}$  and  $\text{Ne}^{+4}$ . **53** (1957), 663-668
- FULLER, A. T. Stability criteria for linear systems and realizability criteria for RC networks. **53** (1957), 878-896
- FULLER, A. T. & FISHER, M. E. On the stabilization of matrices and the convergence of linear iterative processes. **54** (1958), 417-425
- GABRIEL, J. R. On the construction of irreducible representations of the symmetric group. **57** (1961), 330-340
- GANEA, T. & HILTON, P. J. On the decomposition of spaces in Cartesian products and unions. **55** (1959), 248-256
- GANEA, T. & VRANCEANU, G. Topological embeddings of lens spaces. **57** (1961), 688-690
- GANGADHARAN, K. S. Two classical lattice point problems. **57** (1961), 699-721
- GANI, J. & PRABHU, N. U. A storage model with continuous infinitely divisible inputs. **59** (1963), 417-429
- GARLING, D. J. H. Locally convex spaces with denumerable systems of weakly compact subsets. **60** (1964), 813-815
- Weak Cauchy sequences in normed linear spaces. **60** (1964), 817-819
- GARSTANG, R. H. The effect of configuration interaction on forbidden line strengths. **52** (1956), 107-113
- The computation of quadrupole line strengths. **53** (1957), 214-221
- Further computations of quadrupole line strengths. **54** (1958), 383-390
- Mutual magnetic interactions and oscillator strengths in the first spectrum of oxygen. **57** (1961), 115-120
- GARSTANG, R. H. & DOUGLAS, A. S. Transition integrals for Si IV and Ca II. **58** (1962), 377-381
- GEDDES, A. Power-free groups. **60** (1964), 393-408
- GEE, D. B. On Riemann integrability. **51** (1955), 537-538
- GHEORGHITZA, St I. The marginal stability in porous inhomogeneous media. **57** (1961), 871-877
- GILLIS, J. Correlated random walk. **51** (1955), 639-651
- A random walk problem. **56** (1960), 390-392
- Stability of a column of rotating viscous liquid. **57** (1961), 152-159
- GLICKSMAN, S. On the representation and enumeration of trees. **59** (1963), 509-517
- GODDARD, L. S. Transition matrices occurring in the theory of Markoff processes. **51** (1955), 382-384
- GODDARD, L. S. & SCHNEIDER, H. Pairs of matrices with a non-zero commutator. **51** (1955), 551-553

- GODWIN, H. J. On totally complex quartic fields with small discriminants. **53** (1957), 1–4  
 The determination of units in totally real cubic fields. **56** (1960), 318–321  
 The determination of the class-numbers of totally real cubic fields. **57** (1961), 728–730  
 On a conjecture of Barnes and Swinnerton-Dyer. **59** (1963), 519–522
- GOOD, I. J. The joint distribution for the sizes of the generations in a cascade process. **51** (1955), 240–242  
 A new finite series for Legendre polynomials. **51** (1955), 385–388  
 Legendre polynomials and trinomial random walks. **54** (1958), 39–42  
 Random motion and analytic continued fractions. **54** (1958), 43–47  
 Generalizations to several variables of Lagrange's expansion, with applications to stochastic processes. **56** (1960), 367–380  
 A short proof of MacMahon's 'Master Theorem'. **58** (1962), 160  
 Proofs of some 'binomial' identities by means of MacMahon's 'Master Theorem'. **58** (1962), 161–162
- GOODRICH, R. F. & KAZARINOFF, N. D. Scalar diffraction by prolate spheroids whose eccentricities are almost one. **59** (1963), 167–183
- GORDON, W. J. & NEWELL, G. F. Equilibrium analysis of a stochastic model of traffic flow. **60** (1964), 227–236
- GORGUI, M. A. & BASSALI, W. A. Flexural problems of circular ring plates and sectorial plates. I. **56** (1960), 75–95  
 Flexural problems of circular ring plates and sectorial plates. II. **56** (1960), 414–424
- GRAVETT, K. A. H. A characterization of frontier. **52** (1956), 152–153  
 Note on a result of Krull. **52** (1956), 379
- GREEN, A. E. & ENGLAND, A. H. Some two-dimensional punch and crack problems in classical elasticity. **59** (1963), 489–500
- GREEN, A. E. A continuum theory of anisotropic fluids. **60** (1964), 123–128
- GREEN, C. D. & TER HAAR, D. The Ehrenfests' wind-wood model in two dimensions. **51** (1955), 141–148
- GREEN, J. A. On the converse to a theorem of R. Brauer. **51** (1955), 237–239
- GREENWOOD, J. A. The elastic stresses produced in the mid-plane of a slab by pressures applied symmetrically at its surface. **60** (1964), 159–169
- GREVE, W. A geometrical model for the real number field. **57** (1961), 722–727
- GRIFFITH, J. S. Simple proof of a formula due to Racah. **59** (1963), 507
- GRIFFITHS, H. B. A note on commutators in free products. II. **51** (1955), 245–251  
 On a potential-theoretic example of Kiang. **59** (1963), 43–46
- GRIMSHAW, M. E. On Taylor's theorem. **52** (1956), 376–378
- GRIMSHAW, R. H. J. A note on the geometrical optics of diffraction by an interface. **60** (1964), 1013–1022
- GROSSWALD, E., ASPLUND, E. & GRÜNBAUM, B. On a measure of asymmetry of convex bodies. **58** (1962), 217–220
- GRÜNBAUM, B. A simple proof of Borsuk's conjecture in three dimensions. **53** (1957), 776–778
- GRÜNBAUM, B., ASPLUND, E. & GROSSWALD, E. On a measure of asymmetry of convex bodies. **58** (1962), 217–220
- GRUNDY, P. M. & SMITH, C. A. B. Disjunctive games with the last player losing. **52** (1956), 527–533
- GUY, R. K. & SMITH, C. A. B. The  $G$ -values of various games. **52** (1956), 514–526
- HAJNAL, J. The ergodic properties of non-homogeneous finite Markov chains. **52** (1956), 67–77  
 Weak ergodicity in non-homogeneous Markov chains. **54** (1958), 233–246
- HALL, M. & NEWMAN, M. Copositive and completely positive quadratic forms. **59** (1963), 329–339
- HALL, P. Finite-by-nilpotent groups. **52** (1956), 611–616  
 Wreath powers and characteristically simple groups. **58** (1962), 170–184  
 On non-strictly simple groups. **59** (1963), 531–553
- HALTON, J. H. Elliptical whirl of flooded journal bearings. **54** (1958), 119–127
- HALTON, J. H., BEARDWOOD, JILLIAN & HAMMERSLEY, J. M. The shortest path through many points. **55** (1959), 299–327
- HALTON, J. H. Sequential Monte Carlo. **58** (1962), 57–78



- HALTON, J. H. & CANNON, J. R. The irrotational solution of an elliptic differential equation with an unknown coefficient. **59** (1963), 680–682
- HAMILTON, J. & SALAM, A. The bound state representation. **51** (1955), 103–112
- HAMILTON, J. Centre-of-mass state vectors. **52** (1956), 97–106
- HAMMER, P. C. & SMITH, T. J. Conditions equivalent to central symmetry of convex curves. **60** (1964), 779–785
- HAMMERSLEY, J. M. & NELDER, J. A. Sampling from an isotropic Gaussian process. **51** (1955), 652–662
- HAMMERSLEY, J. M. The area enclosed by Pólya's walk. **52** (1956), 78–87
- HAMMERSLEY, J. M. & MORTON, K. W. A new Monte Carlo technique: antithetic variates. **52** (1956), 449–475
- HAMMERSLEY, J. M. & MAULDON, J. G. General principles of antithetic variates. **52** (1956), 476–481
- HAMMERSLEY, J. M. & BROADBENT, S. R. Percolation processes. I. Crystals and mazes. **53** (1957), 629–641
- HAMMERSLEY, J. M. Percolation processes. II. The connective constant. **53** (1957), 642–645
- HAMMERSLEY, J. M., BEARDWOOD, JILLIAN & HALTON, J. H. The shortest path through many points. **55** (1959), 299–327
- HAMMERSLEY, J. M. The number of polygons on a lattice. **57** (1961), 516–523  
A short proof of the Farahat-Mirsky refinement of Birkhoff's theorem on doubly-stochastic matrices. **57** (1961), 681  
Generalization of the fundamental theorem on subadditive functions. **58** (1962), 235–238
- HANDSCOMB, D. C. Proof of the antithetic-variates theorem for  $n > 2$ . **54** (1958), 300–301  
The Monte Carlo method in quantum statistical mechanics. **58** (1962), 594–598  
A Monte Carlo method applied to the Heisenberg ferromagnet. **60** (1964), 115–122  
A rigorous lower bound for the efficiency of a Monte Carlo technique. **60** (1964), 357–358
- HANNA, N. O. M. & BASSALI, W. A. Bending of curvilinear and rectilinear polygonal plates symmetrically loaded over a concentric circle. **57** (1961), 166–179
- HANNAN, E. J. Exact tests for serial correlation in vector processes. **52** (1956), 482–487  
A central limit theorem for systems of regressions. **57** (1961), 583–588
- HARARY, F., BEINEKE, L. W. & MOON, J. W. On the thickness of the complete bipartite graph. **60** (1964), 1–5
- HARDIE, K. A. Note on the Hopf–James invariants. **57** (1961), 746–753
- HARRIS, T. E. A lower bound for the critical probability in a certain percolation process. **56** (1960), 13–20
- HARROP, R. On the existence of finite models and decision procedures for propositional calculi. **54** (1958), 1–13
- HARTREE, D. R. Approximate wave functions, with exchange for  $\text{Mn}^{+2}$ . **51** (1955), 126–130
- HARTREE, D. R., DOUGLAS, A. S. & RUNCIMAN, W. A. Atomic wave functions for gold and thallium. **51** (1955), 486–503
- HARTREE, D. R. The interpolation of atomic wave functions. **51** (1955), 684–692
- HARTREE, D. R. & FROESE, CHARLOTTE. Wave functions for the normal states of  $\text{Ne}^{+3}$  and  $\text{Ne}^{+4}$ . **53** (1957), 663–668
- HARTREE, D. R. A method for the numerical integration of the linear diffusion equation. **54** (1958), 207–213  
The radial charge densities for the  $\text{Ti}^{+2}$  argon core. **56** (1960), 174–175
- HASOFER, A. M. A dam with inverse Gaussian input. **60** (1964), 931–933
- HAWTHORNE, W. R. The growth of secondary circulation in frictionless flow. **51** (1955), 737–743
- HAYES, A. Additive functionals on groups. **58** (1962), 196–205
- HAYES, C. A. A sufficient condition for the differentiation of certain classes of set functions. **54** (1958), 346–353
- HAYMAN, W. K. On the coefficients of univalent functions. **55** (1959), 373–374
- HEAD, J. W. Approximation to transients by means of Laguerre series. **52** (1956), 640–651
- HEAD, J. W. & FINE, M. A note on the convergence of multi-point Taylor's series. **58** (1962), 548–550  
A note on multi-point Laurent–Taylor series. **60** (1964), 172–174

- HEADING, J. The Stokes phenomenon and certain  $n$ th-order differential equations. I. Preliminary investigation of the equations. **53** (1957), 399–418  
 The Stokes phenomenon and certain  $n$ th-order differential equations. II. The Stokes phenomenon. **53** (1957), 419–441  
 The Stokes phenomenon and certain  $n$ th-order differential equations. III. Matrix applications. **56** (1960), 329–341  
 Uniform approximate solutions of certain  $n$ th-order differential equations. I. **59** (1963), 95–110
- HEDLUND, G. A. A class of transformations of the plane. **51** (1955), 554–564
- HEINE, V. The thermodynamics of bodies in static electromagnetic fields. **52** (1956), 546–552
- HEINS, A. E. & SILVER, S. The edge conditions and field representation theorems in the theory of electromagnetic diffraction. **51** (1955), 149–161  
 Comments on the treatment of diffraction of plane waves: addendum to ‘The edge conditions and field representation theorems in the theory of electromagnetic diffraction’. **54** (1958), 131–133
- HELLIWELL, J. B. An application of the Weber–Orr transform to the problem of transonic flow past a finite wedge in a channel. **54** (1958), 391–395  
 Unsymmetrical flow patterns past a finite wedge profile in a high subsonic stream. **57** (1961), 401–414
- HERIVEL, J. W. The derivation of the equations of motion of an ideal fluid by Hamilton’s principle. **51** (1955), 344–349
- HERSZBERG, J. On certain types of isolated  $s$ -ple points on algebraic primals in  $S_2$ . **58** (1962), 465–475
- HIDE, R. The character of the equilibrium of an incompressible heavy viscous fluid of variable density: an approximate theory. **51** (1955), 179–201
- HIGGINS, P. J. Presentations of groupoids, with applications to groups. **60** (1964), 7–20
- HIGMAN, G. On a conjecture of Nagata. **52** (1956), 1–4  
 On finite groups of exponent five. **52** (1956), 381–390
- HILTON, P. J. A note on the  $P$ -homomorphism in homotopy groups of spheres. **51** (1955), 230–233  
 Note on the higher Hopf invariants. **52** (1956), 750–752
- HILTON, P. J. & LEDERMANN, W. Homology and ringoids. I. **54** (1958), 152–167  
 Homology and ringoids. II. **55** (1959), 149–164
- HILTON, P. J. & GANEVA, T. On the decomposition of spaces in Cartesian products and unions. **55** (1959), 248–256
- HILTON, P. J. & LEDERMANN, W. Homology and ringoids. III. **56** (1960), 1–12
- HILTON, P. J. Note on the Jacobi identity for Whitehead products. **57** (1961), 180–182
- HILTON, P. J. & REES, D. Natural maps of extension functors and a theorem of R. G. Swan. **57** (1961), 489–502
- HIRZEBRUCH, F. & ATIYAH, M. F. Bott periodicity and the parallelizability of the spheres. **57** (1961), 223–226
- HOLFORD, R. L. Short surface waves in the presence of a finite dock. I. **60** (1964), 957–983  
 Short surface waves in the presence of a finite dock. II. **60** (1964), 985–1011
- HOOTON, D. J. & BORN, M. Statistical dynamics of multiply-periodic systems. **52** (1956), 287–300
- HOWELL, K. M. Recurrence relations for oscillator-well radial integrals. **54** (1958), 475–478
- HOWELL, K. M. & JAHN, H. A. New (Regge) symmetry relations for the Wigner  $6j$ -symbol. **55** (1959), 338–340
- HSU, L. C. Approximate integration of rapidly oscillating functions and of periodic functions. **59** (1963), 81–88
- HUDSON, J. F. P. Landau damping for non-Maxwellian distributions. **58** (1962), 119–129
- HUGHES, W. F. Relativistic magnetohydrodynamics and irreversible thermodynamics. **57** (1961), 878–889
- HUTSON, V. The circular plate condenser at small separations. **59** (1963), 211–224
- HUZURBAZAR, V. S. On the certainty of an inductive inference. **51** (1955), 761–762
- HYDE, J. Approximate solutions of the general relativity field equations with a scalar meson field. **59** (1963), 739–741

IYER, P. V. K. See KRISHNA IYER, P. V.

- JACK, H. & MACBEATH, A. M. The volume of a certain set of matrices. 55 (1959), 213–223
- JAEGER, J. C. Diffusion in branching regions. 56 (1960), 55–63
- JAHN, H. A. & HOWELL, K. M. New (Regge) symmetry relations for the Wigner  $6j$ -symbol. 55 (1959), 338–340
- JAMES, I. M. Commutative products on spheres. 53 (1957), 63–68  
Whitehead products and vector-fields on spheres. 53 (1957), 817–820  
Embeddings of real projective spaces. 54 (1958), 555–557  
On Lie groups and their homotopy groups. 55 (1959), 244–247  
Some embeddings of projective spaces. 55 (1959), 294–298
- JASWON, M. A. Limiting properties of Mathieu functions. 53 (1957), 111–114
- JASWON, M. A. & BHARGAVA, R. D. Two-dimensional elastic inclusion problems. 57 (1961), 669–680
- JEFFREYS, BERTHA. The use of the Airy functions in a potential barrier problem. 52 (1956), 273–279
- JEFFREYS, H. On the use of asymptotic approximations of Green's type when the coefficient has zeros. 52 (1956), 61–66  
An extension of the Pitman–Koopman theorem. 56 (1960), 393–395
- JHA, P. On the director surface of a rectilinear congruence. 59 (1963), 503–504  
Some properties of a rectilinear congruence. 60 (1964), 697–698
- JOHNSON, B. E. Continuity of homomorphisms of topological algebras. 60 (1964), 171–172
- JOHNSON, R. E. Ideal extensions in an algebra. 57 (1961), 427–428
- JONES, C. W. Elements of an improved linear perturbation theory of steady supersonic flow with axial symmetry. 52 (1956), 336–343
- JONES, D. S. Note on Whitham's 'The propagation of weak spherical shocks in stars'. 51 (1955), 476–485
- JONES, D. S. & WHITHAM, G. B. An approximate treatment of high-frequency scattering. 53 (1957), 691–701
- JONES, D. S. & NOBLE, B. The low-frequency scattering by a perfectly conducting strip. 57 (1961), 364–366
- JOSEPH, V. Physical properties of some empty space-times. 53 (1957), 836–842
- JUNCOSA, M. L. & YOUNG, D. On the Crank–Nicolson procedure for solving parabolic partial differential equations. 53 (1957), 448–461
- KAHN, F. D. The correction of observational data for instrumental band width. 51 (1955), 519–525
- KAKUTANI, S., DVORETZKY, A., ERDŐS, P. & TAYLOR, S. J. Triple points of Brownian paths in 3-space. 53 (1957), 856–862
- KAPOOR, O. P. & BHARGAVA, R. D. Circular inclusion in an infinite elastic medium with a circular hole. 60 (1964), 675–682
- KARLIN, S. & MCGREGOR, J. On a genetics model of Moran. 58 (1962), 299–311
- KARP, S. N. An application of Sturm–Liouville theory to a class of two-part boundary-value problems. 53 (1957), 368–381
- KARP, S. N. & WILLIAMS, W. E. Equivalence relations in diffraction theory. 53 (1957), 683–690
- KAZARINOFF, N. D. & GOODRICH, R. F. Scalar diffraction by prolate spheroids whose eccentricities are almost one. 59 (1963), 167–183
- KEILSON, J. A simple random walk and an associated asymptotic behaviour of the Bessel functions. 58 (1962), 708–709  
Some comments on single-server queuing methods and some new results. 60 (1964), 237–251
- KEILSON, J. & WISHART, D. M. G. A central limit theorem for processes defined on a finite Markov chain. 60 (1964), 547–567
- KEILSON, J. Some comments on single-server queuing methods and some new results. (*Errata.*) 60 (1964), 1034
- KELLY, G. M. Single-space axioms for homology theory. 55 (1959), 10–22  
The exactness of Čech homology over a vector space. 57 (1961), 428–429  
On manifolds containing a submanifold whose complement is contractible. 57 (1961), 507–515

- KELLY, G. M. (*continued*)  
 Observations on the K nneth theorem. 59 (1963), 575–587  
 Complete functors in homology. I. Chain maps and endomorphisms. 60 (1964), 721–735  
 Complete functors in homology. II. The exact homology sequence. 60 (1964), 737–749
- KEMP, R. R. D. On the number of particles in a steady-state universe. 60 (1964), 176–177
- KIEFER, J. A functional equation technique for obtaining Wiener process probabilities associated with theorems of Kolmogorov–Smirnov type. 55 (1959), 328–332
- KILMISTER, C. W. & BASTIN, E. W. The concept of order. II. Measurements. 51 (1955), 454–468  
 The concept of order. III. General relativity as a technique for extrapolating over great distances. 53 (1957), 462–472
- KILMISTER, C. W. A note on summation over Feynman histories. 54 (1958), 302–304
- KILMISTER, C. W. & BASTIN, E. W. The concept of order. IV. Quantum mechanics. 55 (1959) 66–81
- KILMISTER, C. W. & NEWMAN, D. J. A new expression for Einstein’s law of gravitation. 55 (1959), 139–141  
 The use of algebraic structures in physics. 57 (1961), 851–864
- KINGMAN, J. F. C. A mathematical problem in population genetics. 57 (1961), 574–582  
 The single server queue in heavy traffic. 57 (1961), 902–904  
 On queues in which customers are served in random order. 58 (1962), 79–91  
 The effect of queue discipline on waiting time variance. 58 (1962), 163–164  
 On inequalities of the Tchebychev type. 59 (1963), 135–146  
 A martingale inequality in the theory of queues. 60 (1964), 359–361  
 On doubly stochastic Poisson processes. 60 (1964), 923–930
- KODIS, R. D. Variational principles in high-frequency scattering. 54 (1958), 512–529
- KOZIN, F. On approximations to the densities and moments of a class of stochastic systems. 59 (1963), 463–481
- KRISHNA IYER, P. V. & SHAKUNTALA, N. S. Cumulants of some distributions arising from a two-state Markoff chain. 55 (1959), 273–276  
 Asymptotic cumulants for distributions of  $k$ -state Markov chains. 58 (1962), 427–430
- KSHIRSAGAR, A. M. Some extensions of the multivariate  $t$ -distribution and the multivariate generalization of the distribution of the regression coefficient. 57 (1961), 80–85  
 Distributions of the direction and collinearity factors in discriminant analysis. 60 (1964), 217–225
- KUPER, C. G. Note on Ehrenfest’s equations. 51 (1955), 243–244
- KUTTNER, B. Some theorems on the relation between Riesz and Abel typical means. 57 (1961), 61–75
- KY FAN. Some inequalities concerning positive-definite Hermitian matrices. 51 (1955), 414–421
- LAKSHMIKANTH, V. *See* LAKSHMIKANTHAM, V.
- LAKSHMIKANTHAM, V. Some self-reciprocal functions and kernels. 57 (1961), 690–692
- LAKSHMIKANTHAM, V. & AFZAL AHMAD. On self-reciprocal functions for Fourier–Bessel integral transforms. 57 (1961), 778–781
- LAKSHMIKANTHAM, V. On the stability and boundedness of differential systems. 58 (1962), 492–496  
 On the uniqueness and boundedness of solutions of hyperbolic differential equations. 58 (1962), 583–587  
 Differential equations in Banach spaces and the extension of Lyapunov’s method. 59 (1963), 373–381  
 Differential inequalities and extension of Lyapunov’s method. 60 (1964), 891–895
- LAL, K. Theoretical considerations of the temperature distribution in a channel bounded by two co-axial circular pipes. 60 (1964), 653–656
- LARDNER, R. W. On the solutions of the Low equation. 59 (1963), 55–61  
 The general solution of the Low equation for  $KA$ -scattering. 59 (1963), 775–777
- LAREDO, S. J. & PIPPARD, A. B. Thermal conduction in the intermediate state of superconductors. 51 (1955), 368–376
- LAWTON, B. Bounded representations of the positive values of an indefinite quadratic form. 54 (1958), 14–17
- LEARNER, A. Hilbert’s function in a semi-lattice. 55 (1959), 239–243

- LEBOVITZ, N. R. The equilibrium stability of a system of disk dynamos. **56** (1960), 154–173  
 The real solutions of a certain non-linear system of equations. **57** (1961), 503–506
- LEDERMANN, W. & HILTON, P. J. Homology and ringoids. I. **54** (1958), 152–167  
 Homology and ringoids. II. **55** (1959), 149–164  
 Homology and ringoids. III. **56** (1960), 1–12
- LEECH, J. Some solutions of diophantine equations. **53** (1957), 778–780  
 On  $A^4 + B^4 + C^4 + D^4 = E^4$ . **54** (1958), 554–555  
 Coset enumeration on digital computers. **59** (1963), 257–267
- LEHRER, Y. Note on simultaneous linear differential equations with constant coefficients. **53** (1957), 256–257
- LEHRER-ILAMED, Y. On the direct calculations of the representations of the three-dimensional pure rotation group. **60** (1964), 61–66
- LEIGH, D. C. F. The laminar boundary-layer equation: a method of solution by means of an automatic computer. **51** (1955), 320–332
- LESLIE, F. M. The stability of Couette flow of certain anisotropic fluids. **60** (1964), 949–955
- LEVINE, H. The torque on an infinite strip exposed to plane sound waves. **53** (1957), 234–247
- LEVINE, J. Imbedding and isotopy of spheres in manifolds. **60** (1964), 433–437
- LEVY, H. & ROBINSON, W. J. The rotating body problem. **60** (1964), 279–285
- LICKORISH, W. B. R. Homeomorphisms of non-orientable two-manifolds. **59** (1963), 307–317  
 A finite set of generators for the homeotopy group of a 2-manifold. **60** (1964), 769–778
- LIEBECK, H. A note on prime-power groups with symmetrical generating relations. **51** (1955), 394–395  
 Concerning nilpotent wreath products. **58** (1962), 443–451  
 Concerning automorphisms in finitely generated Abelian groups. **59** (1963), 25–31
- LIGHTHILL, M. J. The image system of a vortex element in a rigid sphere. **52** (1956), 317–321
- LINDEN, C. N. Functions regular in the unit circle. **52** (1956), 49–60  
 Inequalities for functions regular in the unit circle. **58** (1962), 26–37
- LITTLEWOOD, D. E. The cosmological principle. **51** (1955), 678–683  
 The behaviour of the universe. **52** (1956), 88–96
- LOH, S. C., CARTER, G. W. & PO, C. Y. K. The field of current in a thin wire ring. **60** (1964), 613–619
- LOHWATER, A. J. & COLLINGWOOD, E. F. Applications of the theory of cluster sets to a class of meromorphic functions. **53** (1957), 93–105
- LONGMAN, I. M. Note on a method for computing infinite integrals of oscillatory functions. **52** (1956), 764–768
- LONGUET-HIGGINS, M. S. Bounds for the integral of a non-negative function in terms of its Fourier coefficients. **51** (1955), 590–603  
 Statistical properties of a moving wave-form. **52** (1956), 234–245  
 On the transformation of a continuous spectrum by refraction. **53** (1957), 226–229  
 On the velocities of the maxima in a moving wave-form. **53** (1957), 230–233  
 The statistical distribution of the curvature of a random Gaussian surface. **54** (1958), 439–453  
 The distribution of the sizes of images reflected in a random surface. **55** (1959), 91–100  
 The focusing of radiation by a random surface when the source is at a finite distance. **56** (1960), 27–40
- LOWIG, H. F. J. On the existence of freely generated algebras. **53** (1957), 790–795
- LOWNDES, J. S. Note on the generalized Mehler transform. **60** (1964), 57–59
- LOYNES, R. M. The stability of a queue with non-independent inter-arrival and service times. **58** (1962), 497–520.  
 The stability of a system of queues in series. **60** (1964), 569–574
- LUDFORD, G. S. S., MARTINEK, J. & YEH, G. C. K. The sphere theorem in potential theory. **51** (1955), 389–393
- LUDFORD, G. S. S. On initial conditions in hydromagnetics. **55** (1959), 141–143
- LUDFORD, G. S. S. & SINGH, M. P. The motion of a non-conducting sphere through a conducting fluid in a magnetic cross-field. **59** (1963), 615–624  
 On the motion of a sphere through a conducting fluid in the presence of a magnetic field. **59** (1963), 625–635  
 The hydromagnetics of an ellipsoid moving in a cross-field. **60** (1964), 341–351

- LYNDEN-BELL, D. On the gravitational collapse of a cold rotating gas cloud. **58** (1962), 709–711
- LYNN, M. S. On the Schur product of  $H$ -matrices and non-negative matrices, and related inequalities. **60** (1964), 425–431
- MCANDREW, M. H. Note on a problem of Erdős. **55** (1959), 210–212
- MACBEATH, A. M. & ROGERS, C. A. A modified form of Siegel's mean-value theorem. **51** (1955), 565–576  
 Siegel's mean value theorem in the geometry of numbers. **54** (1958), 139–151  
 A modified form of Siegel's mean value theorem. II. **54** (1958), 322–326
- MACBEATH, A. M. & JACK, H. The volume of a certain set of matrices. **55** (1959), 213–223
- MACBEATH, A. M. Packings, free products and residually finite groups. **59** (1963), 555–558
- MCCARTHY, I. E. Physical properties of particles obeying generalized statistics. **51** (1955), 131–140
- MCCREA, W. H. & BONDI, H. Energy transfer by gravitation in Newtonian theory. **56** (1960), 410–413
- MACDONALD, I. G. Some enumerative formulae for algebraic curves. **54** (1958), 399–416  
 The Poincaré polynomial of a symmetric product. **58** (1962), 563–568  
 The volume of a lattice polyhedron. **59** (1963), 719–726
- MACDUFFEE, C. C. Arc lengths in special relativity. **56** (1960), 176–181
- McFADDEN, R. & SCHNEIDER, H. Completely simple and inverse semigroups. **57** (1961), 234–236
- MCGREGOR, J. & KARLIN, S. On a genetics model of Moran. **58** (1962), 299–311
- MACK, C. On clumps formed when convex laminae or bodies are placed at random in two or three dimensions. **52** (1956), 246–250
- MACKIE, A. G. The solution of boundary value problems for a general hodograph equation. **54** (1958), 538–553
- MACKIE, A. G. & WEIR, D. G. The propagation of shock waves of constant strength. **56** (1960), 64–74
- MACKIE, A. G. Applications of the theory of the general hodograph equation. Part I. Kirchhoff–Helmholtz flow past a wedge. **58** (1962), 631–637  
 Applications of the theory of the general hodograph equation. Part II. The non-symmetric flow at sonic speed past a flat plate. **58** (1962), 638–645
- McLAIN, D. H. On locally nilpotent groups. **52** (1956), 5–11
- McLAIN, D. H. & DUGUID, A. M.  $FC$ -nilpotent and  $FC$ -soluble groups. **52** (1956), 391–398
- McLAIN, D. H. The existence of subgroups of given order in finite groups. **53** (1957), 278–285
- McLAREN, A. D. On group representations and invariant stochastic processes. **59** (1963), 431–450
- McMILLAN, D. R. & ZEEMAN, E. C. On contractible open manifolds. **58** (1962), 221–224
- McMINN, T. J. Linear measures of some sets of the Cantor type. **53** (1957), 312–317
- McNAMEE, J. & BICKLEY, W. G. Eigenvalues and eigenfunctions of finite-difference operators. **57** (1961), 532–546
- MACRAE, R. E. On the nilpotence of nil ideals. **59** (1963), 679–680
- MAHLER, K. On the Taylor coefficients of rational functions. **52** (1956), 39–48  
 On the Taylor coefficients of rational functions. (*Addendum.*) **53** (1957), 544
- MARCH, N. H. & BALLINGER, R. A. Molecules with tetrahedral and octahedral symmetry. II. Energy calculations and molecular constants for methane, silane and germane. **51** (1955), 504–516  
 Molecules with tetrahedral and octahedral symmetry. III. Theoretical basis of the 'smoothing approximation'. **51** (1955), 517–518
- MARCH, N. H. & COULSON, C. A. Molecules with tetrahedral and octahedral symmetry. IV. A modified Thomas–Fermi scheme for molecules with heavy atoms in the outer positions. **52** (1956), 114–118
- MARCH, N. H. & BANYARD, K. E. Molecules with tetrahedral and octahedral symmetry. V. The electron distribution in  $\text{CCl}_4$ . **52** (1956), 280–286
- MARCH, N. H. & BALLINGER, R. A. Angular terms in the electron density for the phosphine molecule. **52** (1956), 703–711

- MARDER, L. On uniform acceleration in special and general relativity. **53** (1957), 194–198  
 Two bodies at rest in general relativity. **55** (1959), 82–86  
 On space-times with bounded empty regions. **60** (1964), 97–103
- MARTIN, J. L. The exact enumeration of self-avoiding walks on a lattice. **58** (1962), 92–101  
 Quantum theory of unstable particles. **60** (1964), 587–593
- MARTINEK, J., LUDFORD, G. S. S. & YEH, G. C. K. The sphere theorem in potential theory. **51** (1955), 389–393
- MARTINEK, J., YEH, G. C. K. & ZORN, H. Potential and stream function of a vortex disk in the presence of a rigid sphere. **53** (1957), 717–727
- MASON, C. S., BULLARD, E. C. & MUDIE, J. D. Curious behaviour of a proton magnetometer. **60** (1964), 287–293
- MAUDE, R. Exceptional sets with respect to order of integral functions of two variables. **53** (1957), 323–342
- MAULDON, J. G. & HAMMERSLEY, J. M. General principles of antithetic variates. **52** (1956), 476–481
- MAULDON, J. G. On non-dissipative Markov chains. **53** (1957), 825–835  
 Equally inclined spheres. **58** (1962), 420–421
- MAUNDER, C. R. F. The spectral sequence of an extraordinary cohomology theory. **59** (1963), 567–574  
 On the differentials in the Adams spectral sequence. **60** (1964), 409–420  
 Chern characters and higher-order cohomology operations. **60** (1964), 751–764
- MELIGY, A. S. Expansions of certain Whittaker functions. **56** (1960), 233–239  
 Expansions of the Poiseuille and the irregular Coulomb functions. **57** (1961), 782–789
- MELIGY, A. S. & EL GAZZY, E. M. On Coulomb wave functions. **59** (1963), 89–94  
 On the function  $\int_z^\infty e^{-t} t^{-n} dt$ . **59** (1963), 735–737
- MELIGY, A. S. Coulomb wave functions for low energies. **60** (1964), 209–215
- MERCIER, R. P. Diffraction by a screen causing large random phase fluctuations. **58** (1962), 382–400
- MICHAEL, D. H. The stability of a combined current and vortex sheet in a perfectly conducting fluid. **51** (1955), 528–532  
 Energy considerations in the instability of a current-vortex sheet. **57** (1961), 628–637
- MILLAR, R. F. Diffraction by a wide slit and complementary strip. I. **54** (1958), 479–496  
 Diffraction by a wide slit and complementary strip. II. **54** (1958), 497–511
- MILLER, A. J. Road traffic flow considered as a stochastic process. **58** (1962), 312–325  
 Road traffic flow considered as a stochastic process. (*Corrigendum.*) **59** (1963), 508
- MILLER, G. F. The evaluation of eigenvalues of a differential equation arising in a problem in genetics. **58** (1962), 588–593
- MILLER, H. D. A matrix factorization problem in the theory of random variables defined on a finite Markov chain. **58** (1962), 268–285  
 Absorption probabilities for sums of random variables defined on a finite Markov chain. **58** (1962), 286–298
- MILLER, J. B. Series expansions and general transforms. **54** (1958), 358–367  
 On the solution of certain integral equations by generalized functions. **57** (1961), 767–777  
 Generalized Gâteaux and Fréchet derivatives in convolution algebras. **59** (1963), 707–718
- MILLIS, B. G. & CATTON, DIANA. Numerical evaluation of the integral
- $$\frac{1}{2\pi} \int_{-i\infty}^{+i\infty} (\lambda\alpha^3 + \alpha^2 - 1)^{-\frac{1}{2}} e^{-\alpha\omega} d\alpha$$
- 54** (1958), 454–462
- MILNE-THOMSON, L. M. Bounds for the torsional rigidity of isotropic beams. **58** (1962), 417–419
- MIRSKY, L. & FARAHAT, H. K. Permutation endomorphisms and refinement of a theorem of Birkhoff. **56** (1960), 322–328
- MIRSKY, L. Estimates of zeros of a polynomial. **58** (1962), 229–234
- MISHRA, S. K. Diffraction of sound pulses by a fluid cylinder. **60** (1964), 295–312
- MISRA, M. A non-singular electromagnetic field. **58** (1962), 711–712

- MITCHELL, ANN F. S. Sufficient statistics and orthogonal parameters. **58** (1962), 326–337
- MITRA, M. Disturbance produced in an elastic half-space by impulsive normal pressure. **60** (1964), 683–696
- MOFFAT, J. Generalized Riemann spaces. **52** (1956), 623–625  
 The foundations of a generalization of gravitation theory. **53** (1957), 473–488  
 The static spherically symmetric solutions in a unified field theory. **53** (1957), 489–493
- MOLINER, F. GARCIA & SIMONS, S. An extension of the general variational principle of transport theory. **53** (1957), 848–855
- MONK, D. Jacobians of linear systems on an algebraic variety. **52** (1956), 198–201
- MOON, J. W., BEINEKE, L. W. & HARARY, F. On the thickness of the complete bipartite graph. **60** (1964), 1–5
- MORAN, P. A. P. The numerical evaluation of a class of integrals. **52** (1956), 230–233  
 Numerical evaluation of a class of integrals. (*Addendum.*) **53** (1957), 928  
 Random processes in genetics. **54** (1958), 60–71  
 The effect of selection in a haploid genetic population. **54** (1958), 463–467  
 The distribution of gene frequency in a bisexual diploid population. **54** (1958), 468–474  
 The survival of a mutant under general conditions. **57** (1961), 304–314  
 Entropy, Markov processes and Boltzmann's  $H$ -theorem. **57** (1961), 833–842
- MORRIS, G. R. A differential equation for undamped forced non-linear oscillations. I. **51** (1955), 297–312  
 A differential equation for undamped forced non-linear oscillations. II. **54** (1958), 426–438
- MORRIS, I. Modular orthogonal groups in four dimensions. **57** (1961), 239–246
- MORTON, K. W. & HAMMERSLEY, J. M. A new Monte Carlo technique: antithetic variates. **52** (1956), 449–481
- MOYAL, J. E. & EDWARDS, D. A. Stochastic differential equations. **51** (1955), 663–677
- MUDIE, J. D., BULLARD, E. C. & MASON, C. S. Curious behaviour of a proton magnetometer. **60** (1964), 287–293
- MUNN, W. D. On semigroup algebras. **51** (1955), 1–15
- MUNN, W. D. & PENROSE, R. A note on inverse semigroups. **51** (1955), 396–399
- MUNN, W. D. Matrix representations of semigroups. **53** (1957), 5–12  
 The characters of the symmetric inverse semigroup. **53** (1957), 13–18  
 Pseudo-inverses in semigroups. **57** (1961), 247–250  
 A certain sublattice of the lattice of congruences on a regular semigroup. **60** (1964), 385–391
- MUSGRAVE, M. J. P. On whether elastic wave surfaces possess cuspidal edges. **53** (1957), 897–906
- NANDA, V. S. Bipartite partitions. **53** (1957), 273–277
- NARITA, M. A note on the coefficients of Hilbert characteristic functions in semi-regular local rings. **59** (1963), 269–275
- NASH-WILLIAMS, C. St J. A. Random walk and electric currents in networks. **55** (1959), 181–194  
 Abelian groups, graphs and generalized knights. **55** (1959), 232–238  
 On well-quasi-ordering finite trees. **59** (1963), 833–835  
 On well-quasi-ordering lower sets of finite trees. **60** (1964), 369–384
- NASSIF, M. & BASSALI, W. A. Transverse bending of infinite and semi-infinite thin elastic plates. III. **54** (1958), 288–299  
 A thin circular plate normally and uniformly loaded over a concentric elliptic patch. **55** (1959), 101–109
- NELDER, J. A. & HAMMERSLEY, J. M. Sampling from an isotropic Gaussian process. **51** (1955), 652–662
- NEUTS, M. F. General transition probabilities for finite Markov chains. **60** (1964), 83–91
- NEUWIRTH, L. An alternative proof of a theorem of Iwasawa on free groups. **57** (1961), 895–896
- NEWELL, G. F. & GORDON, W. J. Equilibrium analysis of a stochastic model of traffic flow. **60** (1964), 227–236
- NEWMAN, D. J. & KILMISTER, C. W. A new expression for Einstein's law of gravitation. **55** (1959), 139–141
- NEWMAN, D. J. The physical interpretation of entity-structure. **57** (1961), 589–605



- NEWMAN, D. J. & KILMISTER, C. W. The use of algebraic structures in physics. **57** (1961), 851–864
- NEWMAN, M. & HALL, M. Copositive and completely positive quadratic forms. **59** (1963), 329–339
- NEWSTEAD, P. E. & SCHWARZENBERGER, R. L. E. Reducible vector bundles on a quadric surface. **60** (1964), 421–424
- NOBLE, B. & JONES, D. S. The low-frequency scattering by a perfectly conducting strip. **57** (1961), 364–366
- NOBLE, B. The solution of Bessel function dual integral equations by a multiplying-factor method. **59** (1963), 351–362  
Some dual series equations involving Jacobi polynomials. **59** (1963), 363–371
- NOBLE, M. E. A converse theorem on overconvergence of sequences of partial sums. **53** (1957), 592–598
- NORTHCOTT, D. G. A note on the  $AF + B\Phi$  theorem and the theory of local rings. **51** (1955), 545–550  
A note on classical ideal theory. **51** (1955), 766–767  
Abstract dilatations and infinitely near points. **52** (1956), 178–197  
On the notion of a first neighbourhood ring with an application to the  $AF + B\Phi$  theorem. **53** (1957), 43–56  
A note on the global dimension of polynomial rings. **53** (1957), 796–799  
Dilatation properties of regular local rings. **55** (1959), 1–9  
A generalization of a theorem on the content of polynomials. **55** (1959), 282–288  
A property of balanced functors. **57** (1961), 268–270  
Simple reduction theorems for extension and torsion functors. **57** (1961), 483–488
- OBJI, CHIKE. Uniformly almost periodic solutions of non-linear differential equations of the second order. I. General exposition. **51** (1955), 604–613
- OLAGUNJU, P. A. A note on closed operators. **57** (1961), 426
- OLAGUNJU, P. A. & WEST, T. T. The spectra of Fredholm operators in locally convex spaces. **60** (1964), 801–806
- OLDROYD, J. G. The rheology of some two-dimensional disperse systems. **53** (1957), 514–524
- OLVER, F. W. J. & CLENSHAW, C. W. The use of economized polynomials in mathematical tables. **51** (1955), 614–628
- OLVER, F. W. J. Error bounds for the Liouville–Green (or WKB) approximation. **57** (1961), 790–810  
Two inequalities for parabolic cylinder functions. **57** (1961), 811–822
- OORT, F. A note on natural maps of higher extension functors. **59** (1963), 283–286
- PALMER, D. S. Properties of random functions. **52** (1956), 672–686  
Properties of random functions. (*Corrigenda.*) **53** (1957), 264
- PAPADOPULOS, V. M. Scattering by a semi-infinite resistive strip of dominant-mode propagation in an infinite rectangular wave-guide. **52** (1956), 553–563
- PAPERT, S. Which distributive lattices are lattices of closed sets? **55** (1959), 172–176  
An abstract theory of topological subspaces. **60** (1964), 197–203
- PARIA, G. On magneto-thermo-elastic plane waves. **58** (1962), 527–531
- PARKS, P. C. A new proof of the Routh–Hurwitz stability criterion using the second method of Liapunov. **58** (1962), 694–702
- PATANKAR, V. N. A note on recurrent events. **51** (1955), 96–102
- PATTERSON, E. M. Note on nilpotent and solvable algebras. **51** (1955), 37–40  
On certain types of derivations. **54** (1958), 338–345
- PENNINGTON, W. B. On Ingham summability and summability by Lambert series. **51** (1955), 65–80
- PENROSE, R. & MUNN, W. D. A note on inverse semigroups. **51** (1955), 396–399
- PENROSE, R. A generalized inverse for matrices. **51** (1955), 406–413  
On best approximate solutions of linear matrix equations. **52** (1956), 17–19  
The apparent shape of a relativistically moving sphere. **55** (1959), 137–139
- PERCIVAL, I. C. & SEATON, M. J. The partial wave theory of electron-hydrogen atom collisions. **53** (1957), 654–662

- PERFECT, HAZEL. An inequality for the permanent function. **60** (1964), 1030–1031
- PETERSEN, G. M. The norm of iteration of regular matrices. **53** (1957), 286–289  
 Norms of summation methods. **54** (1958), 354–357  
 Summability and bounded sequences. **55** (1959), 257–261  
 Matrices and norms. **57** (1961), 271–273
- PETERSEN, G. M. & BAKER, J. W. Inclusion of sets of regular summability matrices. **60** (1964), 705–712
- PHILLIPS, O. M. The irrotational motion outside a free turbulent boundary. **51** (1955), 220–229  
 The final period of decay of non-homogeneous turbulence. **52** (1956), 135–151
- PIPPARD, A. B. & LAREDO, S. J. Thermal conduction in the intermediate state of superconductors. **51** (1955), 368–376
- PIRANI, F. A. E. On the perihelion motion according to Littlewood's equations. **51** (1955), 535–537
- PO, C. Y. K., CARTER, G. W. & LOH, S. C. The field of current in a thin wire ring. **60** (1964), 613–619
- POLKINGHORNE, J. C. Temporally ordered graphs in quantum field theory. **51** (1955), 113–120  
 Temporally ordered graphs and bound state equations. **51** (1955), 762–765  
 Causal products in quantum field theory. **53** (1957), 260–261  
 Causal amplitudes and the Yang–Feldman formalism. **53** (1957), 843–847  
 A note on the relation between scattering phase and bound states. **54** (1958), 560–561
- POOTS, G. & DENNIS, S. C. R. The solution of linear differential equations. **51** (1955), 422–432
- POPLE, J. A. & BUCKINGHAM, A. D. The polarization of a hydrogen atom in combined electric and magnetic fields. **53** (1957), 262–264
- PORTEOUS, I. R. Blowing up Chern classes. **56** (1960), 118–124
- POWDRILL, B. & CHADWICK, P. Application of the Laplace transform method to wave motions involving strong discontinuities. **60** (1964), 313–324
- POWELL, F. C. A notation for vectors and tensors. **51** (1955), 449–453
- POWER, E. A. & SHAIL, R. The interaction of light with neutral systems. **55** (1959), 87–90
- POWER, E. A. & SAAVEDRA, I. Scattering by a bounded non-linear singularity. **57** (1961), 121–130  
 Non-linear interactions, causality and the  $R$ -matrix. **60** (1964), 935–938
- PRA BHU, N. U. & GANI, J. A storage model with continuous infinitely divisible inputs. **59** (1963), 417–429
- PRINGLE, G. E. The potential of a circular current. **57** (1961), 385–392
- PROKHOVNIK, S. J. A cosmological model of light propagation. **60** (1964), 265–271
- PYLE, I. C. The second-order effect of free electrons on lattice conduction. **53** (1957), 508–513
- PYM, J. S. On the Rees–Suschkewitsch structure theorem. **59** (1963), 563–566
- RADHA, T. K. & RAMAKRISHNAN, A. Correlation problems in evolutionary stochastic processes. **57** (1961), 843–847
- RADHAKRISHNA, H. C. & BHARGAVA, R. D. Two-dimensional elliptic inclusions. **59** (1963), 811–820  
 Elliptic inclusions in a stressed matrix. **59** (1963), 821–832
- RADO, R. Note on generalized inverses of matrices. **52** (1956), 600–601
- RAGAB, F. M. Some formulae for the associated Legendre functions of the first kind. **51** (1955), 538–540  
 Some formulae for the product of hypergeometric functions. **53** (1957), 106–110  
 A series associated with an identity of Orr. **57** (1961), 900–901  
 Expansions of generalized hypergeometric functions in series of products of generalized Whittaker functions. **58** (1962), 239–243  
 The inverse Laplace transform of the product of two Whittaker functions. **58** (1962), 580–582
- RAJAGOPAL, C. T. On the Nörlund summability of Fourier series. **59** (1963), 47–53
- RAMAKRISHNAN, A. & RADHA, T. K. Correlation problems in evolutionary stochastic processes. **57** (1961), 843–847
- RAMANUJAM, C. P. Cubic forms over algebraic number fields. **59** (1963), 683–705
- RANKIN, R. A. A crystal dislocation problem. **57** (1961), 898–899

- RAO, V. V. L. N. Some self-reciprocal functions and kernels. **55** (1959), 62–65  
 Self-reciprocal properties of certain functions. **57** (1961), 561–567
- RAVETZ, J. R. Distributions defined as limits. I. Distributions as derivatives; continuity. **53** (1957), 76–92
- RAYCHAUDHURI, A. K. & SOM, M. M. Stationary cylindrically symmetric clusters of particles in general relativity. **58** (1962), 338–345
- REES, D. A note on valuations associated with a local domain. **51** (1955), 252–253  
 A basis theorem for polynomial modules. **52** (1956), 12–16  
 Two classical theorems of ideal theory. **52** (1956), 155–157  
 A theorem of homological algebra. **52** (1956), 605–610  
 The grade of an ideal or module. **53** (1957), 28–42  
 Polar modules. **53** (1957), 554–567  
 Degree functions in local rings. **57** (1961), 1–7  
 $\alpha$ -transforms of local rings and a theorem on multiplicities of ideals. **57** (1961), 8–17
- REES, D. & HILTON, P. J. Natural maps of extension functors and a theorem of R. G. Swan. **57** (1961), 489–502
- REID, W. H. On the stretching of material lines and surfaces in isotropic turbulence with zero fourth cumulants. (With an appendix by G. K. Batchelor.) **51** (1955), 350–362  
 The effects of surface tension and viscosity on the stability of two superposed fluids. **57** (1961), 415–425
- REUFEL, M. Polynomial modules and general polynomials. **60** (1964), 765–767
- RHODES, F. A generalization of isometrics to uniform spaces. **52** (1956), 399–405
- RIDLEY, E. CICELY. The interpolation of atomic fields. **51** (1955), 693–701  
 The self-consistent field for  $\text{Mo}^+$ . **51** (1955), 702–706  
 Approximate self-consistent fields for  $\text{In}^{3+}$  and  $\text{Sb}^{3+}$ . **52** (1956), 698–702  
 A numerical method of solving second-order linear differential equations with two-point boundary conditions. **53** (1957), 442–447  
 Self-consistent fields without exchange for  $\text{Pr}^{3+}$  and  $\text{Tm}^{3+}$ . **56** (1960), 41–54
- RIKITAKE, TSUNEJI. Oscillations of a system of disk dynamos. **54** (1958), 89–105
- RILEY, N. The thermal boundary layer in the flow between converging plane walls. **59** (1963), 225–229
- RINGROSE, J. R. Compact linear operators of Volterra type. **51** (1955), 44–55  
 Precompact linear operators in locally convex spaces. **53** (1957), 581–591  
 On the resolvent and the principal vectors of a compact linear operator. **60** (1964), 525–531
- ROBERTS, G. T. Topologies defined by bounded sets. **51** (1955), 379–381  
 Order continuous measures. **60** (1964), 205–207
- ROBERTS, P. H. The stability of hydromagnetic Couette flow. **60** (1964), 635–651
- ROBERTSON, H. H. Phase calculations for nuclear scattering on the pilot ACE. **52** (1956), 538–545
- ROBINSON, D. J. S. Groups in which normality is a transitive relation. **60** (1964), 21–38
- ROBINSON, W. J. & LEVY, H. The rotating body problem. **60** (1964), 279–285
- ROGERS, C. A. & MACBEATH, A. M. A modified form of Siegel's mean-value theorem. **51** (1955), 565–576  
 Siegel's mean value theorem in the geometry of numbers. **54** (1958), 139–151  
 A modified form of Siegel's mean value theorem. II. **54** (1958), 322–326
- ROGERS, K. Complex homogeneous linear forms. **52** (1956), 35–38  
 A combinatorial problem in Abelian groups. **59** (1963), 559–562
- ROSE, A. Many-valued logical machines. **54** (1958), 307–321  
 A note on the representation of general recursive functions and the  $\mu$  quantifier. **55** (1959), 145–148  
 A note on the use of logical computers to determine the most efficient method of using factory machines. **56** (1960), 186–188
- ROSEBLADE, J. E. On certain classes of locally soluble groups. **58** (1962), 185–195
- ROSENBERG, R. M. On normal mode vibrations. **60** (1964), 595–611
- ROTH, L. Irregular threefolds which possess anticanonical systems. **52** (1956), 617–622
- ROUTLEDGE, N. A. Logic on electronic computers: a practical method for reducing expressions to conjunctive normal form. **52** (1956), 161–173

- ROY, S. K. & ELIEZER, C. J. The effect of a magnetic pole on the energy levels of a hydrogen-like atom. **58** (1962), 401-404
- RUBEN, H. A theorem on the cumulative product of independent random variables. **55** (1959), 333-337
- RUNCIMAN, W. A., DOUGLAS, A. S. & HARTREE, D. R. Atomic wave functions for gold and thallium. **51** (1955), 486-503
- RUSTON, A. F. Conjugate Banach spaces. **53** (1957), 576-580  
Auerbach's theorem and tensor products of Banach spaces. **58** (1962), 476-480
- RUTOVITZ, D. Absolute and unconditional convergence in normed linear spaces. **58** (1962), 575-579
- SAAVEDRA, I. & POWER, E. A. Scattering by a bounded non-linear singularity. **57** (1961), 121-130  
Non-linear interactions, causality and the  $R$ -matrix. **60** (1964), 935-938
- SACK, R. A. Equivalence of two absorption problems with Markovian transitions and continuous or discrete time parameters. **55** (1959), 177-180
- SALAM, A. & HAMILTON, J. The bound state representation. **51** (1955), 103-112
- SALEM, L. Some consequences of bond alternation in long polyenes. **57** (1961), 353-363
- SAMAL, G. On the number of real roots of a random algebraic equation. **58** (1962), 433-442
- SANDER, K. F. Solutions of certain finite difference equations connected with Laplace's equation. **58** (1962), 38-51
- SANDERSON, B. J. & SCHWARZENBERGER, R. L. E. Non-immersion theorems for differentiable manifolds. **59** (1963), 319-322
- SARMA, G. N. Solutions of unsteady boundary-layer equations. **60** (1964), 137-158
- SAWYER, D. B. A remark on translated sets. **52** (1956), 157-159
- SAXENA, R. K. A definite integral involving associated Legendre function of the first kind. **57** (1961), 281-283  
Definite integrals involving  $G$ -functions. **58** (1962), 489-491  
Some formulae for the  $G$ -function. **59** (1963), 347-350  
Integrals involving Bessel functions and Whittaker functions. **60** (1964), 174-176
- SCHUEUR, P. A. G. A statistical method for analysing observations of faint radio stars. **53** (1957), 764-773
- SCHIELDROP, E. B. A principle in classical mechanics with a 'realistic' path-element extending the principle of least action. **51** (1955), 469-475
- SCHINZEL, A. On primitive prime factors of  $a^n - b^n$ . **58** (1962), 555-562
- SCHNEIDER, H. & GODDARD, L. S. Pairs of matrices with a non-zero commutator. **51** (1955), 551-553
- SCHNEIDER, H. & MCFADDEN, R. Completely simple and inverse semigroups. **57** (1961), 234-236
- SCHOFFELD, R. Products of linear forms. **60** (1964), 1032-1033
- SCHUMACHER, D. L. The direction of time and the equivalence of 'expanding' and 'contracting' world-models. **60** (1964), 575-579
- SCHWARZENBERGER, R. L. E. Reducible vector bundles on a quadric surface. **58** (1962), 209-216
- SCHWARZENBERGER, R. L. E. & SANDERSEN, B. J. Non-immersion theorems for differentiable manifolds. **59** (1963), 319-322
- SCHWARZENBERGER, R. L. E. Embeddings in Euclidean space. **59** (1963), 505-507
- SCHWARZENBERGER, R. L. E. & NEWSTEAD, P. E. Reducible vector bundles on a quadric surface. **60** (1964), 421-424
- SCIAMA, D. W. On a non-symmetric theory of the pure gravitational field. **54** (1958), 72-80  
Recurrent radiation in general relativity. **57** (1961), 436-439
- SCOINS, H. I. & BOLTON, H. C. Eigenvalues of differential equations by finite difference methods. **52** (1956), 215-229  
Eigenvalue problems treated by finite-difference methods. II. Two-dimensional Schrödinger equations. **53** (1957), 150-161
- SCOINS, H. I. The number of trees with nodes of alternate parity. **58** (1962), 12-16
- SCOTT, J. M. C. The retardation of alpha particles when capture and loss occur. **51** (1955), 121-125

- SEATON, M. J. & PERCIVAL, I. C. The partial wave theory of electron-hydrogen atom collisions. **53** (1957), 654-662
- SELLS, C. C. L. Surface tension effect on waves in a liquid layer. **60** (1964), 657-666
- SHAIL, R. & POWER, E. A. The interaction of light with neutral systems. **55** (1959), 87-90
- SHAKUNTALA, N. S. & KRISHNA IYER, P. V. Cumulants of some distributions arising from a two-state Markoff chain. **55** (1959), 273-276
- Asymptotic cumulants for distributions of  $k$ -state Markov chains. **58** (1962), 427-430
- SHANMUGADHASAN, S. Generalized canonical formalism for degenerate dynamical systems. **59** (1963), 743-757
- SHARMA, K. C. Integrals involving products of  $G$ -function and Gauss's hypergeometric function. **60** (1964), 539-542
- SHARPLES, A. An approximate method in high-frequency scattering. **58** (1962), 662-670
- SHAW, R. Spinor identities. **51** (1955), 234-236
- SHENTON, L. R. A semi-infinite random walk with discrete steps. **51** (1955), 442-448
- SHERCLIFF, J. A. Entry of conducting and non-conducting fluids in pipes. **52** (1956), 573-583
- SHUKLA, H. S. A note on the sums of certain bilateral hypergeometric series. **55** (1959), 262-266
- SILVER, S. & HEINS, A. E. The edge conditions and field representation theorems in the theory of electromagnetic diffraction. **51** (1955), 149-161
- Comments on the treatment of diffraction plane waves: addendum to 'The edge conditions and field representation theorems in the theory of electromagnetic diffraction'. **54** (1958), 131-133
- SILVERMAN, R. A. Scattering of plane waves by locally homogeneous dielectric noise. **54** (1958), 530-537
- SIM, A. C. An asymptotic expansion for Bessel functions derived with respect to their order. **57** (1961), 284-287
- SIMONS, S. The absorption of very high frequency sound in dielectric solids. **53** (1957), 702-716
- SIMONS, S. & MOLINER, F. GARCIA. An extension of the general variational principle of transport theory. **53** (1957), 848-855
- The interaction of longitudinally polarized vibrations in an isotropic dielectric. **57** (1961), 86-95
- Partial orderings on real linear topological spaces. **59** (1963), 323-327
- SINGH, M. P. & LUDFORD, G. S. S. The motion of a non-conducting sphere through a conducting fluid in a magnetic cross-field. **59** (1963), 615-624
- On the motion of a sphere through a conducting fluid in the presence of a magnetic field. **59** (1963), 625-635
- The hydromagnetics of an ellipsoid moving in a cross-field. **60** (1964), 341-351
- SINGH, V. N. A note on the partial sums of certain basic bilateral hypergeometric series. **52** (1956), 756-758
- Ramanujan's continued fraction and the Bauer-Muir transformation. **57** (1961), 76-79
- SLATER, L. J. The integration of hypergeometric functions. **51** (1955), 288-296
- Hypergeometric Mellin transforms. **51** (1955), 577-589
- The real zeros of the confluent hypergeometric function. **52** (1956), 626-635
- SMART, D. R. Representation of Hilbert space operators by  $(nJ)$ -matrices. **53** (1957), 304-311
- A fixed-point theorem. **57** (1961), 430
- SMITH, C. A. B. & GUY, R. K. The  $G$ -values of various games. **52** (1956), 514-526
- SMITH, C. A. B. & GRUNDY, P. M. Disjunctive games with the last player losing. **52** (1956), 527-533
- SMITH, D. H. A note on complete hyperspaces. **52** (1956), 602-604
- Hyperspaces of a CANR\*. **57** (1961), 754-758
- SMITH, M. G. The isotropic scattering of a concentrated ray pencil from a point source. **60** (1964), 105-114
- The transport equation with plane symmetry and isotropic scattering. **60** (1964), 909-921
- SMITH, R. A. A uniqueness theorem concerning gravity fields. **57** (1961), 865-870
- SMITH, T. J. & HAMMER, P. C. Conditions equivalent to central symmetry of convex curves. **60** (1964), 779-785

- SMITH, W. L. Extensions of a renewal theorem. **51** (1955), 629–638  
 On renewal theory, counter problems, and quasi-Poisson processes. **53** (1957), 175–193  
 On renewal theory, counter problems, and quasi-Poisson processes. (*Addendum*.) **54** (1958), 305  
 A note on characteristic functions which vanish identically in an interval. **58** (1962), 430–432
- SMITHIES, F. Extensions of ideals in associative algebras. **55** (1959), 277–281
- SMITHIES, F. & BERNAU, S. J. A note on normal operators. **59** (1963), 727–729
- SNEEDON, I. N. Note on an electrified circular disk situated inside a coaxial infinite hollow cylinder. **58** (1962), 621–624
- SOM, M. M. & RAYCHAUDHURI, A. K. Stationary cylindrically symmetric clusters of particles in general relativity. **58** (1962), 338–345
- SRINIVASAN, B. A note on blocks of modular representations. **60** (1964), 179–182
- STALLINGS, J. The piecewise-linear structure of Euclidean space. **58** (1962), 481–488
- STASHEFF, J. On homotopy Abelian  $H$ -spaces. **57** (1961), 734–745
- STEEL, W. H. & WARD, JOAN Y. Incomplete Bessel and Struve functions. **52** (1956), 431–441
- STEPHEN, M. J. Double refraction phenomena in quantum field theory. **54** (1958), 81–88  
 The interaction of nuclear multipole moments with an external charge distribution in elliptic coordinates. **57** (1961), 348–352
- STEPHENSON, G. Generally covariant non-linear Lagrangians. **55** (1959), 375–376  
 Quadratic Lagrangians and gauge-invariance in covariant field theories. **56** (1960), 247–251  
 A static spherically symmetric solution of the Einstein–Maxwell–Yukawa field equations. **58** (1962), 521–526
- STEWARTSON, K. On the motion of a flat plate at high speed in a viscous compressible fluid.  
 I. Impulsive motion. **51** (1955), 202–219  
 Motion of a sphere through a conducting fluid in the presence of a strong magnetic field. **52** (1956), 301–316  
 The dispersion of a current on the surface of a highly conducting fluid. **53** (1957), 774–775
- STONE, A. P. Some properties of Wigner coefficients and hyperspherical harmonics. **52** (1956), 424–430  
 Tensor operators under semi-simple groups. **57** (1961), 460–468  
 Representations of the  $n$ -dimensional rotation group. **57** (1961), 469–475
- STRACHAN, C. Formation of an alpha-group in the shell-model of a heavy nucleus. **53** (1957), 494–507
- SUNDARESEN, M. K., BETHE, H. A. & DALITZ, R. H. A singular integral equation in the theory of meson-nucleon scattering. **52** (1956), 251–272
- SURDIN, M. A note on time-varying gravitational potentials. **58** (1962), 550–553
- SWIERCZKOWSKI, S. & COLE, A. J. On a class of non-measurable groups. **57** (1961), 227–229
- SWINNERTON-DYER, H. P. F. & CROFT, H. T. On the Steinhaus billiard table problem. **59** (1963), 37–41
- SZ.-NAGY, B. Isometric flows in Hilbert space. **60** (1964), 45–49
- TAKÁCS, L. On a probability problem arising in the theory of counters. **52** (1956), 488–498  
 On a general probability theorem and its applications in the theory of the stochastic processes. **54** (1958), 219–224
- TALBOT, A. The number of zeros of a polynomial in a half-plane. **56** (1960), 132–147  
 On a class of Tchebysheffian approximation problems solvable algebraically. **58** (1962), 244–267  
 The Tchebysheffian approximation of one rational function by another. **60** (1964), 877–890
- TAUNT, D. R. Remarks on the isomorphism problem in theories of construction of finite groups. **51** (1955), 16–24  
 Finite groups having unique proper characteristic subgroups. I. **51** (1955), 25–36
- TAYLOR, J. C. Renormalization in meson theories. **52** (1956), 534–537  
 The electron-phonon interaction, according to the adiabatic approximation. **52** (1956), 693–697

- TAYLOR, J. G. Classical electrodynamics as a distribution theory. **52** (1956), 119–134  
 Quantum electrodynamics and Hilbert space theory. **52** (1956), 719–733  
 Classical electrodynamics as a distribution theory. II. **54** (1958), 258–264  
 A theorem of continuation for functions of several complex variables. **54** (1958), 377–382  
 A remark on the proof of dispersion relations in quantum field theory. **57** (1961), 694–695
- TAYLOR, S. J. The  $\alpha$ -dimensional measure of the graph set of zeros of a Brownian path. **51** (1955), 265–274
- TAYLOR, S. J., DVORETZKY, A., ERDŐS, P. & KAKUTANI, S. Triple points of Brownian paths in 3-space. **53** (1957), 856–862
- TAYLOR, S. J. & ERDŐS, P. On the Hausdorff measure of Brownian paths in the plane. **57** (1961), 209–222
- TAYLOR, S. J. On the connexion between Hausdorff measures and generalized capacity. **57** (1961), 524–531  
 The exact Hausdorff measure of the sample path for planar Brownian motion. **60** (1964), 253–258
- TEH, H.-H. Construction of orders in Abelian groups. **57** (1961), 476–482
- TEMPERLEY, H. N. V. A study of the ‘irreversibility paradox’ for a simple statistical assembly. **52** (1956), 712–718
- TER HAAR, D. & GREEN, C. D. The Ehrenfests’ wind-wood model in two dimensions. **51** (1955), 141–148
- THOMAS, D. P. Diffraction by a spherical cap. **59** (1963), 197–209  
 Electromagnetic diffraction by two coaxial discs. **60** (1964), 621–634
- THORNE, R. C. The asymptotic solution of differential equations with a turning point and singularities. **53** (1957), 382–398
- TODD, J. A. & ATIYAH, M. F. On complex Stiefel manifolds. **56** (1960), 342–353
- TRUSTRUM, G. B. The correlations between relatives in a random mating diploid population. **57** (1961), 315–320
- TSUNEJI RIKITAKE. *See* RIKITAKE, TSUNEJI
- TUKEY, J. W. Antithesis or regression? **53** (1957), 923–924
- TUPPER, B. O. J. The partition of energy in cosmical physics. **60** (1964), 93–95
- TWEEDIE, M. C. K. Generalizations of Wald’s fundamental identity of sequential analysis to Markov chains. **56** (1960), 205–214
- TYRRELL, J. A. The Enriques threefold. **57** (1961), 897–898
- UNDERHILL, J. Non-relativistic dispersion relations for a two-channel scattering process. **58** (1962), 363–376  
 Dispersion relations for a two-channel scattering process: residues of the scattering amplitudes. **59** (1963), 161–166
- URSELL, F. On the short-wave asymptotic theory of the wave equation  $(\nabla^2 + k^2)\phi = 0$ . **53** (1957), 115–133
- URSELL, F., CHESTER, C. & FRIEDMAN, B. An extension of the method of steepest descents. **53** (1957), 599–611
- URSELL, F. The transmission of surface waves under surface obstacles. **57** (1961), 638–668
- VAROPOULOS, N. Th. A theorem on the continuity of homomorphisms of locally compact groups. **60** (1964), 449–463  
 Studies in harmonic analysis. **60** (1964), 465–516  
 A theorem on cardinal numbers associated with a locally compact Abelian group. **60** (1964), 701–704
- VERBLUNSKY, S. A uniqueness theorem for the exponential series of Herglotz. **56** (1960), 220–232  
 A uniqueness theorem for the exponential series of Herglotz (II). **58** (1962), 422–425  
 On a class of infinite products. **60** (1964), 847–854
- VINCENZ, S. A. & BRUCKSHAW, J. MCG. Note on the probability distribution of a small number of vectors. **56** (1960), 21–26
- VRANCEANU, G. & GANEA, T. Topological embeddings of lens spaces. **57** (1961), 688–690

- WADSWORTH, M. & WRAGG, A. The numerical solution of the heat conduction equation in one dimension. **60** (1964), 897-907
- WALKER, A. M. The existence of Bartlett-Rajalakshman goodness of fit  $G$ -tests for multivariate autoregressive processes with finitely dependent residuals. **54** (1958), 225-232
- WALKER, G. & ADAMS, J. F. An example in homotopy theory. **60** (1964), 699-700
- WALL, C. T. C. On a result in polynomial rings. **56** (1960), 104-108  
 Rational Euler characteristics. **57** (1961), 182-184  
 Resolutions for extensions of groups. **57** (1961), 251-255  
 On the cohomology of certain groups. **57** (1961), 731-733  
 Cobordism of combinatorial  $n$ -manifolds for  $n \leq 8$ . **60** (1964), 807-811
- WALLACE, D. A. R. Note on the radical of a group algebra. **54** (1958), 128-130
- WALTERS, K. & BEARD, D. W. Elastico-viscous boundary-layer flows. I. Two-dimensional flow near a stagnation point. **60** (1964), 667-674
- WARD, A. J. On relations between certain intrinsic topologies in partially ordered sets. **51** (1955), 254-261
- WARD, D. J. A counter-example in area theory. **60** (1964), 821-845
- WARD, G. N. & ALLAN, R. R. Planetary equations in terms of vectorial elements. **59** (1963), 669-677
- WARD, JOAN Y. & STEEL, W. H. Incomplete Bessel and Struve functions. **52** (1956), 431-441
- WATSON, G. L. Least solutions of homogeneous quadratic equations. **53** (1957), 541-543  
 Cubic forms representing arithmetic progressions. **55** (1959), 270-273  
 The inhomogeneous minimum of an indefinite quadratic form. **55** (1959), 368-370
- WEINMANN, A. Asymptotic expansions of generalized Bernoulli polynomials. **59** (1963), 73-80
- WEIR, D. G. & MACKIE, A. G. The propagation of shock waves of constant strength. **56** (1960), 64-74
- WEIR, D. G. A family of exact solutions of one-dimensional anisentropic flow. **57** (1961), 890-894
- WEISS, N. O. The development of a shock from standing waves of finite amplitude in an isentropic fluid. **60** (1964), 129-135
- WEST, T. T. & OLAGUNJU, P. A. The spectra of Fredholm operators in locally convex spaces. **60** (1964), 801-806
- WESTBROOK, D. R. The torsional rigidity of tubes of constant normal thickness. **60** (1964), 1023-1026
- WESTON, J. D. Discontinuous linear functionals. **54** (1958), 559-560
- WHITHAM, G. B. & JONES, D. S. An approximate treatment of high-frequency scattering. **53** (1957), 691-701
- WICKRAMASINGHE, N. C. A note on the vapour pressure of a crystal. **59** (1963), 255-256
- WILKES, M. V. Solution of linear algebraic and differential equations by the long-division algorithm. **52** (1956), 758-763
- WILLIAMS, W. E. Diffraction by a cylinder of finite length. **52** (1956), 322-335
- WILLIAMS, W. E. & KARP, S. N. Equivalence relations in diffraction theory. **53** (1957), 683-690
- WILLIAMS, W. E. Diffraction by an imperfectly conducting right-angled wedge. **55** (1959), 195-209  
 Waves on a sloping beach. **57** (1961), 160-165  
 Vertex generated waves outside metallic wedges. **57** (1961), 393-400  
 Properties of the solution of a certain functional equation. **57** (1961), 439-441  
 Electromagnetic diffraction by a circular disk. **58** (1962), 625-630  
 A class of integral equations. **59** (1963), 589-597  
 Note on the reduction of dual and triple series equations to dual and triple integral equations. **59** (1963), 731-734
- WILLSON, A. J. & CLEMMOW, P. C. A relativistic form of Boltzmann's transport equation in the absence of collisions. **53** (1927) 222-225
- WILLSON, A. J. The propagation of magneto-thermo-elastic plane waves. **59** (1963), 483-488
- WIMP, J. & FIELDS, J. L. Basic series corresponding to a class of hypergeometric polynomials. **59** (1963), 599-605



- WISHART, D. M. G. & KEILSON, J. A central limit theorem for processes defined on a finite Markov chain. **60** (1964), 547-567
- WOODS, A. C. The anomaly of convex bodies. **52** (1956), 406-423
- WRAGG, A. The solution of an infinite set of differential-difference equations occurring in polymerization and queueing problems. **59** (1963), 117-124
- WRAGG, A. & WADSWORTH, M. The numerical solution of the heat conduction equation in one dimension. **60** (1964), 897-907
- WULFSOHN, A. A note on the vague topology for measures. **58** (1962), 421-422
- WYNN, P. On a Procrustean technique for the numerical transformation of slowly convergent sequences and series. **52** (1956), 663-671
- YEH, G. C. K., LUDFORD, G. S. S. & MARTINEK, J. The sphere theorem in potential theory. **51** (1955), 389-393
- YEH, G. C. K., MARTINEK, J. & ZORN, H. Potential and stream function of a vortex disk in the presence of a rigid sphere. **53** (1957), 717-727
- YOUNG, D. & JUNCOSA, M. L. On the Crank-Nicolson procedure for solving parabolic partial differential equations. **53** (1957), 448-461
- ZEEMAN, E. C. A proof of the comparison theorem for spectral sequences. **53** (1957), 57-62  
The lack of universal coefficient theorems for spectral sequences. **53** (1957), 925-927  
A note on a theorem of Armand Borel. **54** (1958), 396-398
- ZEEMAN, E. C. & McMILLAN, D. R. On contractible open manifolds. **58** (1962), 221-224
- ZEEMAN, E. C. Relative simplicial approximation. **60** (1964), 39-43
- ZIENAU, S. & CORINALDESI, E. On an inequality for the momentum derivative of the scattering phase. **52** (1956), 599-600
- ZIMAN, J. M. The electron-phonon interaction, according to the adiabatic approximation. **51** (1955), 707-712
- ZORN, H., MARTINEK, J. & YEH, G. C. K. Potential and stream function of a vortex disk in the presence of a rigid sphere. **53** (1957), 717-727
- ZUCKER, I. J. & FISHER, M. E. On a non-linear differential equation for the zero-point energies of the rare gas solids. **57** (1961), 107-114
- ZUCKER, I. J. Quantum mechanics of the isotropic three-dimensional anharmonic oscillator. **60** (1964), 273-278





