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## BULLETIN BIBLIOGRAPHIQUE

**Essays on topology and related topics.** — Mémoires dédiés à Georges de Rham. — Publiés sous la direction de André Haefliger [et] Raghavan Narasimhan. — Un volume relié,  $16 \times 23,5$ , de XII, 252 pages, dont 125 en français, avec un portrait. — Prix: US\$ 16.50. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*Henri Cartan*: Les travaux de Georges de Rham sur les variétés différentiables. — *John Milnor and Oscar Burlet*: Torsion et type simple d'homotopie. — *Michael Atiyah and Friederich Hirzebruch*: Spin-manifolds and group actions. — *Paul F. Baum and Raoul Bott*: On the zeroes of meromorphic vector-fields. — *Raoul Bott and Shiing S. Chern*: Some formulas related to complex transgression. — *Kunihiko Kodaira*: On homotopy  $K3$  surfaces. — *Armand Borel*: Pseudo-concavité et groupes arithmétiques. — *Aldo Andreotti and Giuseppe Tomassini*: Some remarks on pseudoconcave manifolds. — *Jean-Louis Koszul*: Trajectoires convexes de groupes affines unimodulaires. — *Edoardo Vesentini*: Maximum theorems for spectra. — *Nicolaas H. Kuiper and Besseline Terpstra-Keppler*: Differentiable closed embeddings of Banach manifolds. — *Morris W. Hirsch*: On invariant subsets of hyperbolic sets. — *William Browder and Ted Petrie*: Semi-free and quasi free  $S^1$  actions on homotopy spheres. — *S. P. Nokinov*: Pontrjagin classes, the fundamental group and some problems of stable algebra. — *Jacques Boéchat et André Haefliger*: Plongements différentiables des variétés orientées de dimension 4 dans  $R^7$ . — *Claude Weber*: Taming complexes in the metastable range. — *Beno Eckman et Serge Maumary*: Le groupe des types simples d'homotopie sur un polyèdre. — *Jacques Tits*: Sur le groupe des automorphismes d'un arbre. — *Michel A. Kervaire*: Multiplicateurs de Schur et  $K$ -théorie. — *René Thom*: Topologie et linguistique. — *Liste des publications scientifiques de G. de Rham*.

**H. SAMELSON.** — **Notes on Lie algebras.** — Van Nostrand Reinhold mathematical studies, 23. — Un volume broché,  $13 \times 20$ , de 165 pages. — Prix: £2. 4s. — Van Nostrand Reinhold Co, New York/Cincinnati/Toronto/London/Melbourne, 1969.

*Generalities*: basic definitions, examples; structure constants; relations to Lie groups; elementary algebraic concepts; representations, the Killing form; solvable and nilpotent; Engel's theorem; Lie's theorem; Cartan's 1st criterion; Cartan's 2nd criterion; representations of  $A_1$ , classification; complete reduction. — *Structure theory*: Cartan subalgebra; roots; roots for semisimple  $g$ ; strings; Cartan integers; vector figure; vector figures of rank 2; Weyl-Chevalley normal form, 1st stage; Weyl-Chevalley normal form, 2nd stage, compact form; properties of vector figures; fundamental system; classification; the simple Lie algebras. — *Representations*: Cartan-Stiefel diagram; weights and weight vectors, uniqueness; existence; complete reduction; Cartan semigroup, representation ring; Weyl character formula; some examples; orthogonal and symplectic representations.

**M. OHTSUKA.** — **Dirichlet problem, extremal length and prime ends.** — Van Nostrand Reinhold mathematical studies, 22. — Un volume broché,  $13 \times 20$ , de 326 pages. — Van Nostrand Reinhold Co, New York/Cincinnati/Toronto/Melbourne, 1970.

*Dirichlet problem*: semicontinuous functions; harmonic functions and Poisson integral; subharmonic functions; Perron's method; regular boundary points; Green's function; sets of harmonic measure zero; irregular boundary points; Riemann's mapping theorem; harmonic measure; evaluation of subharmonic and analytic functions. — *Extremal length*: length of curves; definition of extremal length; extremal functions; elementary properties; level curves and harmonic flows; Gross' theorems on star-shaped domain; boundary limits of Dirichlet finite functions; Green's lines; harmonic measure in a domain with side boundary; extremal distance; Pfluger's theorem; symmetric domains; symmetrization; circles; triangles; four points on a line; general four points; use of elliptic modular functions; Prágmén-Lindelöf's theorem; Ahlfors' distortion theorem; a type problem; weak and unstable boundary components; reduced extremal distance. — *Prime ends*: conformal mapping of a Jordan domain; prime ends; Carathéodory's and Mazurkiewicz's theories of prime ends; principal points; accessible prime ends; characterization of the impression and the set of principal points; classification of prime ends; wings.

H. G. GARNIR, M. DE WILDE et J. SCHMETS. — **Analyse fonctionnelle. Théorie constructive des espaces linéaires à semi-normes.** — Tome 1: Théorie générale. — Mathematische Reihe, Band 36. — Un volume relié, 17 × 24,5, de 562 pages. — Prix: FS 98.00. — Birkhäuser Verlag, Basel und Stuttgart, 1968.

*Espaces linéaires à semi-normes*: espaces linéaires; semi-normes; convergence; ouverts et fermés; bornés; précompacts, compacts et extractables; espace particulier; limite inductive, produit, quotient. — *Dual d'un espace à semi-normes*: fonctionnelles linéaires; fonctionnelles linéaires bornées; espace affaibli  $E_a$ ; duaux; duaux particuliers; espaces nucléaires; fonctionnelles bilinéaires et produits tensoriels; espaces complexes modulaires; fonctionnelles multiplicatives. — *Opérateurs dans les espaces linéaires à semi-normes*: opérateurs linéaires; espaces d'opérateurs bornés; fonctions définies dans un espace euclidien et à valeurs dans un espace linéaire à semi-normes; théorie spectrale des opérateurs bornés.

I. G. PETROVSKII. — **Lectures on the theory of integral equations.** — Translated from the second revised (1951) russian edition by Hyman Kamel and Horace Komm. — Un volume relié, 15,5 × 23,5, de 98 pages. — Prix: US\$ 5.00. — Graylock Press, Rochester, N.Y., 1957.

Introduction. The Fredholm theorems. — Volterra integral equations. — Integral equations with real symmetric kernels.

A. Y. KHINCHIN. — **Mathematical foundations of quantum statistics.** — Translation from the first (1951) russian edition. — Edited by Irwin Shapiro. — Un volume relié, 15,5 × 23,5, de 232 pages. Prix: US\$ 10.00. — Graylock Press, Albany, N.Y., 1970.

Introduction. — Preliminary concepts of the theory of probability. — Preliminary concepts of quantum mechanics. — General principles of quantum statistics. — The foundations of the statistics of photons. — Foundations of the statistics of material particles. — Thermodynamic conclusions. — The statistics of heterogeneous systems. — The distribution of a component and its energy. — The principle of canonical averaging. — The reduction to a one-dimensional problem in the case of complete statistics. — Some general theorems of statistical physics. — Symmetric functions on multi-dimensional surfaces.

P. S. ALEKSANDROV. — **Combinatorial topology.** — Volume I. — Un volume relié,  $15,5 \times 23,5$ , de 225 pages, avec figures. — Prix: US\$ 8.50. — Graylock Press, Baltimore, MD., 1956.

*Introduction*: survey of the elementary properties of topological spaces; the Jordan theorem; surfaces. — *Complexes. Coverings. Dimensions*: complexes; Sperner's lemma and its corollaries; introduction to dimension theory.

P. S. ALEKSANDROV. — **Combinatorial topology.** — Volume II: The Betti groups. — Un volume relié,  $15,5 \times 23,5$ , de 244 pages, avec figures. — Prix: US\$ 8.50. — Graylock Press, Rochester, N.Y., 1957.

Chains. The operator  $\Delta$ . —  $\Delta$ -groups of complexes (Lower Betti or homology groups). — The operator  $\nabla$  and the groups  $\nabla^r(\mathcal{R}, \mathcal{U})$ . Canonical bases. Calculation of the groups  $\Delta^r(\mathcal{B}, \mathcal{U})$  and  $\Delta^r(\mathcal{B}, \mathcal{U})$  by means of the groups  $\Delta^r(\mathcal{B})$ . — Invariance of the Betti groups. — The  $\Delta$ -groups of compacta. — Relative cycles and their applications.

P. S. ALEKSANDROV. — **Combinatorial topology.** — Volume III. — Un volume relié,  $15,5 \times 23,5$ , de 148 pages, avec figures. — Prix: US\$ 8.50. — Graylock Press, Albany, N.Y., 1960.

*Homological manifolds. The duality theorems. Cohomology groups of compacta*: homological manifolds ( $h$ -manifolds); cohomology groups of compacta and the Alexander-Pontryagin duality; linking, the little Alexander duality. — *Introduction to the theory of continuous mappings of polyhedra*: the Brower theory of continuous mapping in  $R^n$  and  $S^n$ ; fixed points of continuous mappings of polyhedra.

M. EISEN. — **Elementary combinatorial analysis.** — Notes on mathematics and its applications. — Un volume relié,  $16 \times 23,5$ , de 244 pages, avec 12 diags. — Prix: US\$ 17.40. — Gordon & Breach, New York/London/Paris, 1969.

*Permutations and combinations*: two counting principles; permutations; combinations; solutions of linear equations; division into classes; selections taking any number at a time. — *The multinomial theorem*: summation and product notation; binomial theorem; sums involving binomial coefficients; the multinomial theorem; the binomial series. — *Generating functions*: combinatorial generating functions; generating functions for permutations; distribution of balls in cells; recursion. — *The principle of inclusion and exclusion*: more counting principles; counting objects with  $m$  properties; rook polynomials. — *Application of combinatorial analysis to probability theory.* — *Möbius function and Polya's theorem*: partially ordered sets; the Möbius function; groups; Burnside's lemma; the cycle index; Polya's theorem; generalization of Polya's theorem; references. — *Answers to problems.*

R. L. KRUSE and D. T. PRICE. — **Nilpotent rings.** — Notes in mathematics and its applications. — Un volume relié,  $16 \times 23,5$ , de 136 pages, avec 6 figures. — Prix: US\$ 15.00. — Gordon & Breach, New York/London/Paris, 1969.

Elementary results. — Examples of nilpotent rings. — Families and capability. — The subring structure of nilpotent rings. — Counting finite nilpotent rings. — The construction of some special rings.

R. A. BONIC. — **Linear functional analysis.** — Notes on mathematics and its applications. — Un volume relié,  $16 \times 23,5$ , de 124 pages. — Gordon & Breach, New York/London/Paris, 1969.

*Vector spaces* : notions from set theory; examples and definitions; bases; dimension; isomorphism theorems; duals and adjoints. — *Metric spaces* : definitions and examples; open and closed sets; continuous functions; compactness; completeness. — *Banach spaces* : definitions and examples; finite dimensional case; the space  $L(E, F)$ ; the algebra  $L(E, E)$ ; the Hahn-Banach theorem. — *Some special Banach spaces* : Hilbert space;  $c_0$ ,  $l^1$  and  $l^\infty$ ; the  $l^p$ -spaces; differentiable functions; Hölder continuous functions. — *Some important classes of operators* : compact operators; operators in Hilbert space; nuclear operators; Fredholm operators. — *Chains and nuclear spaces* : continuous chains; compact chains; nuclear chains and spaces.

**Functional analysis and related fields.** — Proceedings of a Conference in honor of Professor Marshall Stone, held at the University of Chicago, May 1968. — Edited by Felix E. Browder. — Un volume relié,  $16 \times 23,5$ , de 241 pages, avec un portrait. — Prix: US\$ 16.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*F. E. Browder* : Nonlinear engenvalue problems and group invariance. — *S. S. Chern, M. do Carmo, and S. Kobayashi* : Miniaml submanifolds of a sphere with second fundamental form of constant lenth. — *Harish-Chandra* : Eisenstein series over finite fields. — *E. Hewitt* :  $\mathcal{L}_p$  transforms of compact groups. — *T. Kato, and S. T. Kuroda* : Theory of simple scattering and eigen-function expansions. — *G. W. Mackey* : Induced representations of locally compact groups and applications. — *L. Nachbin* : Convolution operators in spaces of nuclearly entire functions on a Banach space. — *E. Nelson* : Operants: A functional calculus for non-commuting operators. — *I. Segal* : Local non-linear functions of quantum fields. — *A. Weil* : On the analogue of the modular group in characteristic  $p$ . — *A. Zygmund* : A theorem on the formal multiplication of trigonometric series. — *S. MacLane* : The influence of M. H. Stone on the origins of category theory. — *Remarks of Professor Stone*.

V. P. PALADOMOV. — **Linear differential operators with constant coefficients.** — Die Grundlehren der mathematischen Wissenschaften, Band 168. — Translated by A. A. Brown. — Un volume relié,  $16 \times 23,5$ , de VIII, 444 pages. — Prix: US\$ 27.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*Introduction.* — *Analytic methods* : homological tools; division with remainder in the space of power series; cohomologies of analytic functions of bounded growth; the fundamental theorem. — *Differential equations with constant coefficients* : linear spaces and distributions; homogeneous systems of equations; inhomogeneous systems; overdetermined systems.

**Selecta Mathematica II.** — Herausgegeben von Konrad Jacobs. — Heidelberger Taschenbücher, Band 67. — Un volume relié,  $13,5 \times 20,5$ , de 185 pages, avec 11 figures. — Prix: US\$ 3.60. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*H.-D. Ebbinghaus* : Turing-Maschinen und berechenbare Funktionen I. — *F.-K. Mahn* : Turing-Maschinen und berechenbare Funktionen II. — *H.-D. Ebbinghaus* : Turing-Maschinen und berechenbare Funktionen III. — *H.-D. Ebbinghaus* : Aufzählbarkeit. — *H. Hermes* : Entscheidungsproblem und Dominospiele. — *K. Jacobs* : Turing-Maschinen und zufällige 0-1-Folgen.

**Wahrscheinlichkeitsrechnung und mathematische Statistik in Aufgaben.** — Von I. J. Diner, M. P. Ganin, L. B. Komarow, A. A. Sweschnikow, K. B. Starobin, B. G. Wolodin. — Unter der Redaktion von Professor Dr. A. A. Sweschnikow. — Mathematik für Technische Hochschulen, Band 9. — Übersetzung aus dem Russischen. — Un volume relié,  $17 \times 23,5$ , de VII, 500 pages, avec 44 figures. — Prix: 29.00 M. — B. G. Teubner Verlagsgesellschaft, Leipzig, 1970.

Zufällige Ereignisse. — Zufallsgrößen. — Systeme von Zufallsgrößen. — Parameter und Verteilungen von Funktionen zufälliger Größen. — Entropie und Information. — Grenzwertsätze. — Korrelationstheorie von Zufallsfunktionen. — Markowsche Prozesse. Auswertungsmethoden von Beobachtungen.

L. HOERMANDER. — **Linear partial differential operators.** — Third revised printing. — Die Grundlehren der mathematischen Wissenschaften, Band 116. — Un volume relié,  $16 \times 33,5$ , de VII, 287 pages, avec 1 figure. — Prix: DM 42.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1969.

*Functional analysis*: distribution theory; some special spaces of distributions. — *Differential operators with constant coefficients*: existence and approximation of solutions of differential equations; interior regularity of solutions of differential equations; the Cauchy problem (constant coefficients). — *Differential operators with variable coefficients*: differential equations which have no solutions; differential operators of constant strength; differential operators with simple characteristics; the Cauchy problem (variable coefficients); elliptic boundary problems. — *Some algebraic lemmas*.

G. KOETHE. — **Topological vector spaces I.** — Translated by D. J. H. Garling. — Die Grundlehren der mathematischen Wissenschaften, Band 159. — Un volume relié,  $16 \times 33,5$ , de xv, 456 pages. — Prix: DM 78.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1969.

*Fundamentals of general topology*: topological spaces; nets and filters; compact spaces and sets; metric spaces; uniform spaces; real functions on topological spaces. — *Vector spaces over general fields*: vector spaces; linear mappings and matrices; the algebraic dual space; tensor products; linearly topologized spaces; the theory of equations in  $E$  and  $E^*$ ; locally nearly compact spaces; the linear strong topology. — *Topological vector spaces*: normed spaces; topological vector spaces; convex sets; the separation of convex sets; the Hahn-Banach theorem. — *Locally convex spaces. Fundamentals*: the definition and simplest properties of locally convex spaces; locally convex hulls and kernels; inductive and projective limits of locally convex spaces; duality; the different topologies on a locally convex space; the determination of various dual spaces and their topologies. — *Topological and geometrical properties of locally convex spaces*: the bidual space; semi-reflexivity and reflexivity; some results on compact and on convex sets; extreme points and extreme rays of convex sets; metric properties of normed spaces. — *Some special classes of locally convex spaces*: barrelled spaces and Montel spaces; bornological spaces;  $(F)$ - and  $(DF)$ -spaces; perfect spaces; counterexamples.

C. MIRANDA. — **Partial differential equations of elliptic type.** — Second revised edition. — Translated by Zane C. Motteler. — Ergebnisse der Mathematik und ihrer Grenzgebiete, Band 2. — Un volume relié,  $16 \times 33,5$ , de XII, 370 pages. — Prix: US\$ 16.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Boundary value problems for linear equations. — Functions represented by integrals. — Transformation of the boundary value problems into integral equations. — Generalized solutions of the boundary value problems. — A priori majorization of the solutions of the boundary value problems. — Nonlinear equations. — Other research on the equations of second order. Equations of higher order. Systems of equations.

J. L. LIONS et E. MAGENES. — **Problèmes aux limites non homogènes et applications.** — Volume 1. — Travaux et recherches mathématiques. — Un volume relié,  $16 \times 24,5$ , de XIX, 372 pages. — Dunod, Paris, 1968.

Théorie hilbertienne des espaces de trace et d'interpolation. — Opérateurs elliptiques. Théorie hilbertienne. — Equations d'évolution variationnelles. — Commentaires. — Problèmes.

J. L. LIONS et E. MAGENES. — **Problèmes aux limites non homogènes et applications.** — Volume 2. — Travaux et recherches mathématiques. — Un volume relié,  $16 \times 24,5$ , de XV, 254 pages. — Dunod, Paris, 1968.

Opérateurs d'évolution paraboliques. Théorie hilbertienne. — Opérateurs d'évolution hyperboliques, de Petrowsky et de Schrödinger. Théorie hilbertienne. — Applications aux problèmes de contrôle optimal. — Problèmes aux limites et prolongements d'opérateurs. — Commentaires. — Problèmes.

J. L. LIONS et E. MAGENES. — **Problèmes aux limites non homogènes et applications.** — Volume 3. — Travaux et recherches mathématiques. — Un volume relié,  $16 \times 24,5$ , de XVII, 328 pages. — Dunod, Paris, 1970.

Ultradistributions scalaires et vectorielles. — Problèmes aux limites elliptiques dans les espaces de distributions et d'ultradistributions. — Equations d'évolution dans les espaces de distributions et d'ultradistributions. — Problèmes aux limites paraboliques dans les espaces d'ultradistributions. — Les équations d'évolution du deuxième ordre en  $t$  et du type de Schroedinger. — Commentaires. — Problèmes. — Calcul des variations dans les espaces du type de Gevrey.

**Symposium on automatic demonstration.** — Held at Versailles, France, December 1968. — Edited by M. Laudet, D. Lacombe, L. Nolin and M. Schützenberger. — Lecture notes in mathematics, 125. — Un volume broché,  $17,5 \times 25,5$ , de V, 310 pages. — Prix: US\$ 5.50. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Contient 3 exposés en français et 14 en anglais de Michel Laudet, André Arnold, N. J. de Bruijn, Erwin Engeler, Roland Fraise, A. Grzegorzcyk, Hao Wang, Robert Kowalski, G. Kreisel, D. W. Loveland, David Luckham, Z. Pawlak, Jacques Pitrat, Dag Prawitz, G. Robinson and L. Wos, Dana Scott, L. Wos and G. Robinson.

**Symposium on optimization.** — Held in Nice, June 29th-July 5th, 1969. — Edited by A. V. Balakrishnan, M. Contesou, B. F. de Veubeke, P. Krée, J. L. Lions, N. N. Moiseev. — Lecture notes in mathematics, 132. — Un volume broché,  $17,5 \times 25,5$ , de III, 350 pages — Prix: US\$ 6.10. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Contient 12 exposés en français et 11 en anglais de C. Aumasson, A. Auslender, A. Bensoussan, L. D. Berkovitz, R. W. Brockett, T. N. Edelbaum, I. Ekeland, P. Faure, R. Glowinski, W. Heine and J. V. Breakwell, H. J. Kelley and J. L. Speyer, P. J. Laurent

and B. Martinet, B. Lemaire, J. L. Lions and R. Teman, J.-P. Marec, A. Miele and J. W. Cantrell, J. Moreau de Montcheuil, S. E. Moskowitz, L. W. Neustadt, L. S. Pont-ryagin and E. F. Mishenko, J. F. Croce Spinelli, L. W. Taylor et al., P. K. C. Wang.

F. TOPSE. — **Topology and measure.** — Lecture notes in mathematics, 133. — Un volume broché,  $17,5 \times 25,5$ , de xiv, 79 pages. — Prix: US\$ 2.20. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*Part I*: measure and integral, definitions; basic result on construction of a measure; basic result on construction of an integral; finitely additive theory; from « Baire » measures to « Borel » measures, an abstract approach; construction of measures by approximation from outside and by approximation from inside; on the possibility of providing a space of measures with a vague topology. — *Part II*: definition and basic properties of the weak topology; compactness in the weak topology; criteria for weak convergence; on the structure of  $\mathcal{M}(X)$ ; a problem related to questions of uniformity; first solution of the  $\xi$ -problem; second solution of the  $\xi$ -problem; uniformity classes; joint continuity; preservation of weak convergence.

L. SMITH. — **Lectures on the Eilenberg-Moore spectral sequence.** — Lecture notes in mathematics, 134. — Un volume broché,  $17,5 \times 25,5$ , de vii, 142 pages. — Prix: US\$ 3.90. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

The Eilenberg-Moore spectral sequence. — Multiplicative fibrations. — The cobar construction. Applications.

W. STOLL. — **Value distribution of holomorphic maps into compact complex manifolds.** — Lecture notes in mathematics, 135. — Un volume broché,  $17,5 \times 25,5$ , de ii, 267 pages. — Prix: US\$ 5.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Introduction. — Admissible families. — The definition of the proximity form. — The first main theorem. — The construction of singular potentials. — Properties of singular potentials. — The construction of the proximity form. — Level bumps. — Equidistribution. — The existence and continuity of certain integrals. — The fiber integral.

**Séminaire Heidelberg-Saarbrücken-Strasbourg sur la K-théorie.** — Lecture notes in mathematics, 136. — Un volume broché,  $17,5 \times 25,5$ , de iv, 264 pages. Prix: US\$ 5.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

P. LOEFFLER: The clifford algebras  $C^{p,q}$ . — M. ZISMAN:  $k$ -théorie élémentaire. — M. KAROUBI: Algèbres de Clifford et opérateurs de Fredholm. — M. KAROUBI: Foncteurs dérivés et  $k$ -théorie. — M. KAROUBI: Sur la  $k$ -théorie équivariante. — R. GORDON: Vector fields on spheres.

**Reports of the Midwest category seminar IV.** — Edited by S. MacLane. — Lecture notes in mathematics, 137. — Un volume broché,  $17,5 \times 25,5$ , de iii, 139 pages. — Prix: US\$ 3.30. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Brian DAY: On closed categories of functors. — Michael BARR: Relational algebras. — H. APPLGATE and M. TIERNEY: Iterated cotriples. — A. PULTR: The right adjoints into the categories of relational systems. — S. SWIERCZKOWSKI: Triads in the homology of categories. — Eduardo DUBUC and Ross STREET: Dinatural transformations. — PHREILAMBUD: Categorically, the final examination.

D. FOATA et M.-P. SCHUETZENBERGER. — **Théorie géométrique des polynômes eulériens.** — Lecture notes in mathematics, 138. — Un volume broché,  $17,5 \times 25,5$ , de V, 94 pages. — Prix: US\$ 2.80. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Introduction et historique des nombres d'Euler. — Propriétés générales des systèmes d'excédances et de montées.

A. BADRIKIAN. — **Séminaire sur les fonctions aléatoires linéaires et les mesures cylindriques.** — Lecture notes in mathematics, 139. — Un volume broché,  $17,5 \times 25,5$ , de VII, 221 pages. — Prix: US\$ 5.00. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Processus stochastiques linéaires et mesures cylindriques. — Transformées de Fourier des mesures cylindriques. — Le théorème de Bochner. — Intégration sur un espace complètement régulier. — Convergence des mesures. — Opération sur les mesures de Radon. — Limites projectives de mesures de Radon. — Espaces polonais, lusiniens, sousliniens et radoniens. — Topologies équivalentes. — Théorèmes de type Bochner et P. Levy. — Mesures cylindriques gaussiennes. — Applications radonifiantes.

**Lectures in modern analysis and applications II.** — Edited by C. T. Taam. — Lecture notes in mathematics, 140. — Un volume broché,  $17,5 \times 25,5$ , de VI, 119 pages. — Prix: US\$ 2.80. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*Analysis and representation theory*: HARISH-CHANDRA, Some applications of the Schwartz space of a semisimple Lie group; RICHARD V. KADISON, Some analytic methods in the theory of operator algebras. — *Modern analysis and new physical theories*: IRVING E. SEGAL, The mathematical theory of quantum fields; JAMES GLIMM, Mathematical problems in the foundations of quantum field theory; DAVID RUELLE, New methods and problems in statistical mechanics. — *Integration in function spaces and applications*: LEONARD GROSS, Abstract Wiener measure and infinite dimensional potential theory.

G. JAMESON. — **Ordered linear spaces.** — Lecture notes in mathematics, 141. — Un volume broché,  $17,5 \times 25,5$ , de XV, 194 pages. — Prix: US\$ 4.40. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Preliminaries. — Ordered linear spaces. — Linear lattices and Riesz spaces. — Ordered topological linear spaces. — Linear lattices with a topology. — Ordered algebras. — CS-closed sets.

K. W. ROGGENKAMP. — **Lattices over orders.** — Lecture notes in mathematics, 142. — Un volume broché,  $17,5 \times 25,5$ , de V, 388 pages. — Prix: US\$ 6.10. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Modules over orders, one-side ideals over maximal orders. — Genera of lattices. — Grothendieck groups. — Special types of orders. — The number of indecomposable lattices over orders.

K. L. GRUENBERG. — **Cohomological topics in group theory.** — Lecture notes in mathematics, 143. — Un volume broché,  $17,5 \times 25,5$ , de XIV, 275 pages. — Prix: US\$ 5.50. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Fixed point free action. — The cohomology and homology groups. — Presentations and resolutions. — Free groups. — Classical extension theory. — More cohomological machinery. — Finite  $p$ -groups. — Cohomological dimension. — Extension categories, general theory. — More module theory. — Extension categories, finite groups.

**Seminar on differential equations and dynamical systems, II.** — Seminar lectures at the University of Maryland, 1969. — Edited by J. A. Yorke. — Lecture notes in mathematics, 144. — Un volume broché,  $17,5 \times 25,5$ , de vii, 268 pages. — Prix: US\$ 5.50. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

Contient 24 exposés en anglais par Joseph Auslander, H. T. Banks et Marc Q. Jacobs, Stephen Bernfeld, N. P. Bhatia, Shui-Nee Chow, Richard Datko, Vaclav Dolezal, Gregory Dunkel (2 exposés), David E. Gilsinn, Steven Grossman, Otomar Hajek, A. Halanay, James Kaplan, Junji Kato (3 exposés), J. Kurzweil, A. Lasota, Nelson Markley, Kenneth Meyer, V. M. Popov, Steven Saperstone et James A. Yorke, Peter Seibert, George Sell, Bruce Stephen, Arnold Stokes, Aaron Strauss (2 exposés), Daniel Sweet, George Szegő et G. Treccani, Leonard Weiss, Elliot Winston, James A. Yorke.

I. SINGER. — **Basis in Banach spaces I.** — Die Grundlehren der mathematischen Wissenschaften, 154. — Un volume relié,  $16 \times 23,5$ , de vii, 668 pages. — Prix: 30.80. — Springer-Verlag, Berlin/Heidelberg/New York, 1970.

*The basis problem. Some properties of bases in Banach spaces*: definition of a basis in a Banach space; the basis problem; relations between basis in complex and real Banach spaces; the coefficient functionals associated to a basis; bounded bases; normalized basis; biorthogonal systems; the partial sum operators; some characterizations of regular biorthogonal systems; applications; intrinsic characterizations of basis; the norm and the index of a sequence; the index of a Banach space; extension of block basic sequences; domination and equivalence of sequences; equivalent, affinely equivalent and permutatively equivalent bases; stability theorems of Paley-Wiener type; bases in topological linear spaces; weak bases and bounded weak bases in Banach spaces; weak bases and bounded weak bases in conjugate Banach spaces; continuous linear operators in Banach spaces with bases; bases of tensor products; best approximation in Banach spaces with bases; polynomial bases; strict polynomial bases;  $\Gamma$  systems and  $\Lambda$  systems. — *Special classes of bases in Banach spaces*: Classes of bases not involving unconditional convergence: monotone and strictly monotone bases; normal bases; positive bases;  $k$ -shrinking bases; retro-bases in conjugate Banach spaces;  $k$ -boundedly complete bases; relations between various types of bases. Unconditional bases and some classes of unconditional bases: unconditional bases; conditional bases; some characterizations of unconditional bases among  $E$ -complete (or total) biorthogonal systems and among bases; some characterizations by properties of the associated cone; multipliers; intrinsic characterizations of unconditional bases; some separable Banach spaces having to unconditional bases; properties of strong duality; unconditional bases and sequence spaces; orthogonal bases; strictly orthogonal bases; hyperorthogonal and strictly hyperorthogonal bases; symmetric bases; symmetric spaces; perfectly homogeneous bases; absolutely convergent bases; uniform bases.

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Bereiche über dem erweiterten Raume. — Geometrische Grundlagen. — Konstruktion und Theorie der komplexen Räume (H. Holmann). — Darstellung regulärer Funktionen durch elementare Reihen. — Funktionalanalytische Fortsetzungsmethoden (K. Spallek).

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*Tafel III*: Sechsstellige Tafel der Theta-Funktionen und ihrer logarithmischen Ableitungen, der Jacobischen elliptischen Funktionen und ihrer logarithmischen Ableitungen sowie der Weierstrassschen  $\eta$ ,  $\varrho$  und  $\varrho'$ -Funktionen einschliesslich einiger Parameterfunktionen für  $\zeta = z/2K$  als Argument und  $\mathcal{K}$  bzw.  $1/\mathcal{K}$  als Parameter. Hälfte, Parameterbereich  $1 \geq 1/\mathcal{K} \geq 0$ . — *Tafel IV*: Neunstellige Tafel der Legendreschen Normalintegrale erster und zweiter Gattung sowie der Jacobischen Zeta-Funktion und der abgewandelten Heumanschen Lambda-Funktion. — *Tafel V*: Sechsstellige Tafel der  $D$ -Funktionen erster bis vierter Ordnung für die Charakteristiken 1 bis 4. — *Tafel VI*: Sechsstellige Tafel der Legendreschen Normalintegrale erster und zweiter Gattung sowie der Funktion  $A = \int_0^{k^2} K dk^{-2}$  für eine Intervallteilung von 1/10 000.

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