

SELECTED REFERENCES

These references are intended to provide a rounded, rather than complete, indication of the relevant book literature of possible interest, stimulus, and use to the reader.†

Introductory

A sampling of the many books providing suitable background material for the present one:

- 1 Bourbaki, N.: "Les Structures fondamentales de l'analyse," 4 vols., Hermann & Cie, Paris, 1939-1960. Lucid, precise, and up to date; slightly dry.
- 2 Dieudonné, J.: "Foundations of Modern Analysis," Academic Press Inc., New York, 1960. Easily accessible presentation of solid material.
- 3 Gleason, A.: "Fundamentals of Abstract Analysis," Addison-Wesley Publishing Company, Inc., Reading, Mass., 1966. An intensive contemporary treatment of foundations.
- 4 Hausdorff, F.: "Set Theory" (translation), Chelsea Publishing Company, New York, 1962. A nourishing classic, dated technically but modern in spirit.

† Much of the relevant journal literature is included in the bibliography of I. Segal, Algebraic Integration Theory, *Bull. Am. Math. Soc.* 71, pp. 419-489, 1965.

- 5 Kelley, J. L.: "General Topology," D. Van Nostrand Company, Inc., Princeton N.J. Quite detailed treatment of the main logical preliminary.
- 6 Rudin, W.: "Principles of Mathematical Analysis," 2d ed., McGraw-Hill Book Company, New York, 1964. Interpolates effectively between calculus and the present material.

Classics of integration theory

- 7 Caratheodory, C.: "Reelle Funktionen," B. G. Teubner Verlagsgesellschaft, mbH, Leipzig, 1939. A quite accessible prewar synthesis of real variable and integration theory, including a treatment of "outer measure."
- 8 Lebesgue, H.: "Leçons sur l'intégration," Gauthier-Villars, Paris, 1928. An authoritative latter-day account of some of the truly germinal work of the era.
- 9 Saks, S.: "Theory of the Integral" (translation), 2d ed., Hafner Publishing Company, Inc., New York, 1937. A good introduction to abstract integration theory is contained in the first few chapters; the bulk of the book is an account of differentiation theory, written at a relatively mature stage in its development.
- 10 Weil, A.: "L'Intégration dans les groupes topologiques et ses applications," 2d ed., Hermann & Cie, Paris, 1953. A brilliant and stimulating, though concentrated, synthesis of classical methods, and a contemporary outlook, as of just before the war.

Postwar expositions of integration theory

- 11 Bourbaki, N.: "Intégration," 4 vols., Hermann & Cie, Paris, 1952–1963. A smooth, solid presentation of the part of the theory which is readily handled in terms of locally compact regular models.
- 12 Hahn, H., and A. Rosenthal: "Set Functions," The University of New Mexico Press, Albuquerque, N. Mex., 1948. Contains much useful information not readily available elsewhere.
- 13 Halmos, P. R.: "Measure Theory," D. Van Nostrand Company, Inc., Princeton, N.J., 1950. A detailed account of abstract theory from a set-theoretic viewpoint.
- 14 McShane, E. J.: "Integration," Princeton University Press, Princeton, N.J., 1961. An updated, clear presentation of quasi-classical theory.
- 15 Royden, H. L.: "Real Analysis," The Macmillan Company, New York, 1963. Lucid treatment in considerable detail of elementary theory.

Some Further Developments in Analysis and Applications

Functional analysis

- 16 Hille, E., and R. S. Phillips: "Functional Analysis and Semi-groups," rev. ed., American Mathematical Society, Providence, R.I., 1957.
- 17 Riesz, F., and B. Sz.-Nagy: "Functional Analysis," Frederick Ungar Publishing Co., New York, 1955.
- 18 Taylor, A. E.: "Introduction to Functional Analysis," John Wiley & Sons, Inc., New York, 1958.
- 19 Yosida, K.: "Functional Analysis," Academic Press Inc., New York, 1965.

Generalized functions and partial differential equations

- 20 Gelfand, I. M. et al.: "Generalized Functions," vols. 1 and 4 (translation), Academic Press Inc., New York, 1964.
- 21 Hörmander, L.: "Linear Partial Differential Operators," Academic Press Inc., New York, 1963.
- 22 Lions, J. L.: "Équations différentielles opérationnelles et problèmes aux limites," Springer-Verlag OHG, Berlin, 1961.
- 23 Schwartz, L.: "Théorie des distributions," 2 vols., Hermann & Cie, Paris, 1950–1951.

Fourier analysis

- 24 Bochner, S.: "Lectures on Fourier Integrals," Princeton University Press, Princeton, N.J., 1959.
- 25 Carleman, T.: "L'Intégrale de Fourier et questions qui s'y rattachent," Almqvist and Wiksells, Uppsala, Sweden, 1944.
- 26 Mandelbrojt, S.: "Series de Fourier et classes quasi-analytiques de fonctions," Gauthier-Villars, Paris, 1935.
- 27 Paley, R. E. A. C., and N. Wiener: "The Fourier Integral and Certain of Its Applications," Cambridge University Press, London, 1933.
- 28 Wiener, N.: "The Fourier Integral and Certain of Its Applications," Cambridge University Press, London, 1933.
- 29 Zygmund, A.: "Trigonometric Series," rev. ed., 2 vols., Cambridge University Press, London, 1959.

Hilbert space

- 30 Akhiezer, N. I., and I. M. Glazman: "Theory of Linear Operators in Hilbert Space," 2 vols., Ungar Publishing Co., New York, 1961–1963.
- 31 Dixmier, J.: "Les Algèbres d'opérateurs dans l'espace Hilbertien," Gauthier-Villars, Paris, 1957.
- 32 Dixmier, J.: "Les C^* -algèbres et leurs représentations," Gauthier-Villars, Paris, 1964.
- 33 Stone, M. H.: "Linear Transformations in Hilbert Space and Their Applications to Analysis," American Mathematical Society, Providence, R.I., 1932.

Probability theory

- 34 Doob, J. L.: "Stochastic Processes," John Wiley & Sons, Inc., New York, 1953.
- 35 Dynkin, E. B.: "Markov Processes," 2 vols. (translation), Academic Press Inc., New York, 1964.
- 36 Feller, W.: "Introduction to Probability Theory and Its Applications," 2 vols., John Wiley & Sons, Inc., New York, 1957–1966.
- 37 Loève, M.: "Probability Theory," 3d ed., D. Van Nostrand Company, Inc., Princeton, N.J., 1953.

Topological algebras, groups, and linear spaces

- 38 Bourbaki, N.: "Espaces vectoriels topologiques," Hermann & Cie, Paris, 1953–1955.
- 39 Gelfand, I. M., and M. A. Neumark: "Unitäre darstellungen der klassischen Gruppen" (translation), Berlin, Akademie-Verlag GmbH, Berlin, 1957.
- 40 Hoffman, K.: "Banach Algebras of Analytic Functions," Prentice-Hall Inc., Englewood Cliffs, N.J., 1962.
- 41 Kelley, J. L., and I. Namioka et al.: "Linear Topological Spaces," D. Van Nostrand Company Inc., Princeton, N.J., 1963.
- 42 Loomis, L. H.: "Introduction to Abstract Harmonic Analysis," D. Van Nostrand Company, Inc., Princeton, N.J., 1953.
- 43 Nachbin, L.: "The Haar Integral" (translation), D. Van Nostrand Company, Inc., Princeton, N.J., 1965.
- 44 Naimark, M. A.: "Normed Rings," Hafner Publishing Company, Inc., New York, 1964.
- 45 Rickart, C. E.: "General Theory of Banach Algebras," D. Van Nostrand Company, Inc., Princeton, N.J., 1960.

Applications

- 46 Courant, R., and D. Hilbert: "Methods of Mathematical Physics," rev. ed., 2 vols., John Wiley & Sons Inc., New York, 1953–1962.
- 47 Jeffreys, H., and B. S. Jeffreys: "Methods of Mathematical Physics," 3d ed., Cambridge University Press, London, 1956.
- 48 Jost, R.: "General Theory of Quantized Fields," American Mathematical Society, Providence, R.I., 1965.
- 49 Kato, T.: "Perturbation Theory for Linear Operators," Springer-Verlag OHG, Berlin, 1966.
- 50 Mackey, G. W.: "The Mathematical Foundations of Quantum Mechanics," W. A. Benjamin, Inc., New York, 1963.
- 51 Segal, I.: "Mathematical Problems of Relativistic Physics" (Appendix by G. W. Mackey, Group Representations in Hilbert Space), American Mathematical Society, Providence, R.I., 1963.
- 52 von Neumann, J.: "Mathematical Foundations of Quantum Mechanics" (translation), Princeton University Press, Princeton, N.J., 1955.

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Die Grundlehren der mathematischen Wissenschaften in Einzeldarstellungen mit besonderer Berücksichtigung der Anwendungsgebiete

Eine Auswahl

23. Pasch: Vorlesungen über neuere Geometrie
41. Steinitz: Vorlesungen über die Theorie der Polyeder
45. Alexandroff/Hopf: Topologie. Band 1
46. Nevanlinna: Eindeutige analytische Funktionen
63. Eichler: Quadratische Formen und orthogonale Gruppen
102. Nevanlinna/Nevalinna: Absolute Analysis
114. Mac Lane: Homology
123. Yosida: Functional Analysis
127. Hermes: Enumerability, Decidability, Computability
131. Hirzebruch: Topological Methods in Algebraic Geometry
135. Handbook for Automatic Computation. Vol. 1/Part a: Rutishauser: Description of ALGOL 60
136. Greub: Multilinear Algebra
137. Handbook for Automatic Computation. Vol. 1/Part b: Grau/Hill/Langmaack: Translation of ALGOL 60
138. Hahn: Stability of Motion
139. Mathematische Hilfsmittel des Ingenieurs. 1. Teil
140. Mathematische Hilfsmittel des Ingenieurs. 2. Teil
141. Mathematische Hilfsmittel des Ingenieurs. 3. Teil
142. Mathematische Hilfsmittel des Ingenieurs. 4. Teil
143. Schur/Grunsky: Vorlesungen über Invariantentheorie
144. Weil: Basic Number Theory
145. Butzer/Berens: Semi-Groups of Operators and Approximation
146. Treves: Locally Convex Spaces and Linear Partial Differential Equations
147. Lamotke: Semisimpliziale algebraische Topologie
148. Chandrasekharan: Introduction to Analytic Number Theory
149. Sario/Oikawa: Capacity Functions
150. Iosifescu/Theodorescu: Random Processes and Learning
151. Mandl: Analytical Treatment of One-dimensional Markov Processes
152. Hewitt/Ross: Abstract Harmonic Analysis. Vol. 2: Structure and Analysis for Compact Groups. Analysis on Locally Compact Abelian Groups
153. Federer: Geometric Measure Theory
154. Singer: Bases in Banach Spaces I
155. Müller: Foundations of the Mathematical Theory of Electromagnetic Waves
156. van der Waerden: Mathematical Statistics
157. Prohorov/Rozanov: Probability Theory. Basic Concepts. Limit Theorems. Random Processes
158. Constantinescu/Cornea: Potential Theory on Harmonic Spaces
159. Köthe: Topological Vector Spaces I
160. Agrest/Maksimov: Theory of Incomplete Cylindrical Functions and their Applications
161. Bhatia/Szegő: Stability Theory of Dynamical Systems
162. Nevanlinna: Analytic Functions
163. Stoer/Witzgall: Convexity and Optimization in Finite Dimensions I
164. Sario/Nakai: Classification Theory of Riemann Surfaces
165. Mitrinović/Vasić: Analytic Inequalities
166. Grothendieck/Dieudonné: Eléments de Géométrie Algébrique I
167. Chandrasekharan: Arithmetical Functions
168. Palamodov: Linear Differential Operators with Constant Coefficients
169. Rademacher: Topics in Analytic Number Theory
170. Lions: Optimal Control of Systems Governed by Partial Differential Equations
171. Singer: Best Approximation in Normed Linear Spaces by Elements of Linear Subspaces

172. Bühlmann: Mathematical Methods in Risk Theory
173. Maeda/Maeda: Theory of Symmetric Lattices
174. Stiefel/Scheifele: Linear and Regular Celestial Mechanics. Perturbed Two-body Motion—Numerical Methods—Canonical Theory
175. Larsen: An Introduction to the Theory of Multipliers
176. Grauert/Remmert: Analytische Stellenalgebren
177. Flügge: Practical Quantum Mechanics I
178. Flügge: Practical Quantum Mechanics II
179. Giraud: Cohomologie non abélienne
180. Landkof: Foundations of Modern Potential Theory
181. Lions/Magenes: Non-Homogeneous Boundary Value Problems and Applications I
182. Lions/Magenes: Non-Homogeneous Boundary Value Problems and Applications II
183. Lions/Magenes: Non-Homogeneous Boundary Value Problems and Applications III
184. Rosenblatt: Markov Processes. Structure and Asymptotic Behavior
185. Rubinowicz: Sommerfeldsche Polynommethode
186. Handbook for Automatic Computation. Vol. 2. Wilkinson/Reinsch: Linear Algebra
187. Siegel/Moser: Lectures on Celestial Mechanics
188. Warner: Harmonic Analysis on Semi-Simple Lie Groups I
189. Warner: Harmonic Analysis on Semi-Simple Lie Groups II
190. Faith: Algebra: Rings, Modules, and Categories I
191. Faith: Algebra II: Ring Theory
192. Mal'cev: Algebraic Systems
193. Pólya/Szegö: Problems and Theorems in Analysis I
194. Igusa: Theta Functions
195. Berberian: Baer *-Rings
196. Athreya/Ney: Branching Processes
197. Benz: Vorlesungen über Geometrie der Algebren
198. Gaal: Linear Analysis and Representation Theory
199. Nitsche: Vorlesungen über Minimalflächen
200. Dold: Lectures on Algebraic Topology
201. Beck: Continuous Flows in the Plane
202. Schmetterer: Introduction to Mathematical Statistics
203. Schoeneberg: Elliptic Modular Functions
204. Popov: Hyperstability of Control Systems
205. Nikol'skii: Approximation of Functions of Several Variables and Imbedding Theorems
206. André: Homologie des Algèbres Commutatives
207. Donoghue: Monotone Matrix Functions and Analytic Continuation
208. Lacey: The Isometric Theory of Classical Banach Spaces
209. Ringel: Map Color Theorem
210. Gihman/Skorohod: The Theory of Stochastic Processes I
211. Comfort/Negrepointis: The Theory of Ultrafilters
212. Switzer: Algebraic Topology—Homotopy and Homology
213. Shafarevich: Basic Algebraic Geometry
214. van der Waerden: Group Theory and Quantum Mechanics
215. Schaefer: Banach Lattices and Positive Operators
216. Pólya/Szegö: Problems and Theorems in Analysis II
217. Stenström: Rings of Quotients
218. Gihman/Skorohod: The Theory of Stochastic Processes II
219. Duvaut/Lions: Inequalities in Mechanics and Physics
220. Kirillov: Elements of the Theory of Representations
221. Mumford: Algebraic Geometry I: Complex Projective Varieties
222. Lang: Introduction to Modular Forms
223. Bergh/Löfström: Interpolation Spaces. An Introduction
224. Gilbarg/Trudinger: Elliptic Partial Differential Equations of Second Order
225. Schütte: Proof Theory
226. Karoubi: K-Theory
227. Grauert/Remmert: Theorie der Steinschen Räume