

References

1. Adams, J. F.: Vector fields on spheres. Ann. of Math. 75, 603 - 632 (1962).
2. Adams, J. F.: On the groups $J(X)$. Topology 2, 181 - 195 (1963). II. Topology 3, 137 - 171 (1965). III. Topology 3, 193 - 222 (1965). IV. Topology 5, 21 - 71 (1966).
3. Alexander, J. P., Conner, P. E., and Hamrick, G. C.: Odd order groups actions and Witt classification of innerproducts. Lecture Notes in Math. 625. Heidelberg-New York: Springer 1977.
4. Alexander, J. P., Hamrick, G. C., and Vick, J. W.: Linking forms and maps of odd prime order. Trans. Amer. Math. Soc. 221 (1976), 169-185.
5. Almkvist, G.: The Grothendieck Ring of the Category of Endomorphisms. Journal of Algebra 28, 375 - 388 (1974).
6. Atiyah, M. F.: Characters and cohomology of finite groups. Publ. Math. IHES 9, 23 - 64 (1961).
7. Atiyah, M. F.: Power operations in K-theory. Quart. J. Math. Oxford (2) 17, 165 - 193 (1966).
8. Atiyah, M. F.: K-Theory and reality. Quart. J. Math. Oxford (2) 17, 367 - 386 (1966).
9. Atiyah, M. F.: K-Theory. New York - Amsterdam: Benjamin 1967.
10. Atiyah, M. F.: Bott periodicity and the index of elliptic operators. Quart. J. Math. Oxford (2) 19, 113 - 140 (1968).
11. Atiyah, M. F., and I. G. Mac Donald: Introduction to commutative algebra. Reading, Mass.: Addison-Wesley 1969.
12. Atiyah, M. F., and G. B. Segal: Equivariant K-theory and completion. J. of Diff. Geo. 3, 1 - 18 (1969).

13. Atiyah, M. F., and Segal, G. B.: Exponential isomorphisms for λ -rings. *Quart. J. Math. Oxford* (2) 22, 381 - 378 (1971).
14. Atiyah, M. F. and D. O. Tall: Group representations, λ -rings, and the J-homomorphism. *Topology* 8, 253 - 297 (1969).
15. Bass, H.: The Dirichlet unit theorem, induced characters, and Whitehead groups of finite groups. *Topology* 4, 391 - 410 (1966).
16. Bass, H.: Euler characteristics and characters of discrete groups. *Inventiones math.* 35, 155 - 196 (1976).
17. Baues, H. J.: Obstruction theory. *Lecture Notes in Math.* 628. Berlin-Heidelberg-New York: Springer 1977.
18. Becker, J. C., and D. H. Gottlieb: Applications of the evaluation map and transfer theorems. *Math. Ann.* 211, 277 - 288 (1974).
19. Becker, J. C., and D. H. Gottlieb: The transfer map and fiber bundles. *Topology* 14, 1 - 12 (1975).
20. Becker, J. C., and R. E. Schultz: Spaces of equivariant self-equivalences of spheres. *Bull. Amer. Math. Soc.* 79, 158 - 161 (1973).
21. Becker, J. C., and R. E. Schultz: Equivariant function spaces and stable homotopy theory I. *Comment. math. Helv.* 49, 1 - 34 (1974). II. *Indiana Univ. Math. Journal* 25, 481 - 492 (1976).
22. Becker, J. C., and Schultz, R. E.: Fixed point indices and left invariant framings. In: *Geometric appl. of homotopy theory I.* *Lecture notes in math.* 657. Springer-Verlag. 1 - 31 (1978).
23. Boardman, J. M., and R. M. Vogt: Homotopy invariant algebraic structures on topological spaces. *Lecture Notes in Math.* 347 Berlin-Heidelberg-New York: Springer 1973.
24. Boothby, W., and H.-C. Wang: On the finite subgroups of connected Lie groups. *Comment. Math. Helv.* 39, 281 - 294 (1964).
25. Borel, A.: Remarks on the spectral sequence of a map. In: *Seminar on transformation groups.* Princeton: Princeton Univ. Press 1960.

26. Borel, A.: Fixed point theorems for elementary commutative groups.
In: Seminar on transformation groups. Princeton: Univ. Press,
Princeton 1960.
27. Borel, A.: Cohomologie des espaces localement compact d'après
J. Leray. Lecture Notes in Math. 2. Berlin-Heidelberg-New York:
Springer 1964.
28. Borel, A., et J.-P. Serre: Sur certain sous groupes des groupes de
Lie compacts. Comment. Math. Helv. 27, 128 - 139 (1953).
29. Borel, A., et J. de Siebenthal: Les sous-groupes fermés de rang
maximum des groupes de Lie clos. Comment. Math. Helv. 23, 200 - 221
(1949).
30. Borewicz, S. I., und I. R. Safarevic: Zahlentheorie. Basel:
Birkhäuser 1966.
31. Bott, R.: Lectures on $K(X)$. New York - Amsterdam: Benjamin 1969.
32. Bourbaki, N.: Topologie générale. Paris: Hermann 1961.
33. Bourbaki, N.: Algèbre commutative. Paris: Hermann 1961 - 1965.
34. Bourbaki, N.: Groupes et algèbres de Lie. Paris: Hermann 1960 - 1975.
35. Bredon, G. E.: Sheaf theory. New York: McGraw-Hill 1967.
36. Bredon, G. E.: Equivariant cohomology theories. Lecture Notes in
Math. 34. Berlin-Heidelberg-New York: Springer 1967.
37. Bredon, G. E.: Introduction to compact transformation groups.
New York-London: Academic Press 1972.
38. Bröcker, Th.: Singuläre Definition der äquivarianten Bredon Homolo-
gie. Manuscr. math. 5, 91 - 102 (1971).
39. Brown, K. S.: Euler characteristics of discrete groups and G -spaces.
Inventiones math. 27, 229 - 264 (1974).
40. Brown, K. S.: Euler Characteristic of Groups: The p -Fractional Part.
Inventiones math. 29, 1 - 5 (1975).

41. Brown, K. S.: Complete Euler characteristics and fixed-point theory. Preprint, IHES 1978.
42. Brown, K. S.: Groups of virtually finite dimension. In: Proc. of Durham conf. on homological and combinatorial techniques in group theory.
43. Brumfiel, G., and Madsen, I.: Evaluation of the transfer and the universal surgery classes. *Inventiones math.* 32, 133 - 169 (1976).
44. Brumfiel, G. W., and Morgan, J. W.: Quadratic functions, the index modulo 8, and a $\mathbb{Z}/4$ -Hirzebruch formula. *Topology* 12, 105 - 122 (1973)
45. Cartan, H., and S. Eilenberg: *Homological Algebra*. Princeton: Princeton Univ. Press 1956.
46. Chiswell, I. M.: Euler characteristics of groups. *Math. Z.* 147, 1 - 11, 1976.
47. Conner, P. E., and E. E. Floyd: *Differentiable periodic maps*. Berlin-Göttingen-Heidelberg: Springer 1964.
48. Curtis, Ch. W., and I. Reiner: *Representation theory of finite groups and associative algebras*. New York: Interscience 1962.
49. tom Dieck, T.: Klassifikation numerierbarer Bündel. *Arch. Math.* 17, 395 - 399 (1966).
50. tom Dieck, T.: Faserbündel mit Gruppenoperation. *Arch. Math.* 20, 136 - 143 (1969).
51. tom Dieck, T.: Glättung äquivarianter Homotopiemengen. *Arch. Math.* 20, 288 - 295 (1969).
52. tom Dieck, T.: Fixpunkte vertauschbarer Involutionen. *Arch. Math.* 21, 296 - 298 (1970).
53. tom Dieck, T.: Bordism of G -manifolds and integrality theorems. *Topology* 9, 345 - 358 (1970).
54. tom Dieck, T.: Actions of finite abelian p -groups without stationary

- points. *Topology* 9, 359 - 366 (1970).
55. tom Dieck, T.: Characteristic numbers of G -manifolds. I. *Inventiones math.* 13, 213 - 224 (1971).
56. tom Dieck, T.: Lokalisierung äquivarianter Kohomologie-Theorien. *Math. Z.* 121, 253 - 262 (1971).
57. tom Dieck, T.: Orbitsypen und äquivariante Homologie. I. *Arch. Math.* 23, 307 - 317 (1972).
58. tom Dieck, T.: Kobordismtheorie klassifizierender Räume und Transformationsgruppen. *Math. Z.* 126, 31 - 39 (1972).
59. tom Dieck, T.: Periodische Abbildungen unitärer Mannigfaltigkeiten. *Math. Z.* 126, 275 - 295 (1972).
60. tom Dieck, T.: Equivariant homology and Mackey functors. *Math. Ann.* 206, 67 - 78 (1973).
61. tom Dieck, T.: On the homotopy type of classifying spaces. *Manuscripta math.* 11, 41 - 45 (1974).
62. tom Dieck, T.: Characteristic numbers of G -manifolds. II. *J. of Pure and Applied Algebra* 4, 31 - 39 (1974).
63. tom Dieck, T.: Orbitsypen und äquivariante Homologie II. *Arch. Math.* 26, 650 - 662 (1975).
64. tom Dieck, T.: The Burnside ring of a compact Lie group. I. *Math. Ann.* 215, 235 - 250 (1975).
65. tom Dieck, T.: A finiteness theorem for the Burnside ring of a compact Lie group. *Composition math.* 35, 91 - 97 (1977).
66. tom Dieck, T.: Idempotent elements in the Burnside ring. *J. of Pure and Applied Algebra* 10, 239 - 247 (1977).
67. tom Dieck, T.: Homotopy-equivalent group representations. *J. f. d. r. u. a. Math.* 298, 182 - 195 (1978).

68. tom Dieck, T.: Homotopy equivalent group representations and Picard groups of the Burnside ring and the character ring. *Manuscripta math.* 26, 179 - 200 (1978).
69. tom Dieck, T., and T. Petrie: Geometric modules over the Burnside ring. *Inventiones math.* 47, 273 - 287 (1978).
70. tom Dieck, T., K. H. Kamps und D. Puppe: Homotopietheorie. *Lecture Notes in Math.* 157. Berlin-Heidelberg-New York: Springer 1970.
71. Dold, A.: Partitions of unity in the theory of fibrations. *Ann. of Math.* 78, 223 - 255 (1963).
72. Dold, A.: Halbexakte Homotopiefunktoren. *Lecture Notes in Math.* 12. Berlin-Heidelberg-New York: Springer 1966.
73. Dold, A.: Chern classes in general cohomology. *Istituto Nazionale di Alta Matematica Symposia Mathematica Vol. V*, 385 - 410 (1970).
74. Dold, A.: K-theory of non-additive functors of finite degree. *Math. Ann.* 196, 177 - 197 (1972).
75. Dold, A.: *Lectures on algebraic topology.* Heidelberg-New York: Springer 1972.
76. Dold, A.: The fixed point index of fibre-preserving maps. *Inventiones math.* 25, 281 - 297 (1974).
77. Dold, A.: The fixed point transfer of fibre-preserving maps. *Math. Z.* 148, 215 - 244 (1976).
78. Dold, A.: Geometric cobordism and the fixed point transfer. In: *Algebraic topology. Proc. Vancouver Lecture notes in math.* 673. Springer-Verlag. 32 - 87 (1978).
79. Dress, A.: A characterization of solvable groups. *Math. Z.* 110, 213 - 217 (1969).
80. Dress, A.: Contributions to the theory of induced representations. *Algebraic K-Theory II, Proc. Batelle Institute Conference 1972;* Springer Lecture notes 342, 183 - 240 (1973).

81. Dress, A.: Induction and structure theorems for orthogonal representations of finite groups. *Ann. of Math.* 102, 291 - 325 (1975).
82. Feshbach, M.: The transfer and characteristic classes. In: *Geometric appl. of homotopy theory I. Lecture notes in math.* 657. Springer-Verlag. 156 - 162 (1978).
83. Floyd, E. E.: Periodic maps via Smith theory. In: *Seminar on transformation groups.* Princeton: Princeton Univ. Press 1960.
84. Folkman, J.: Equivariant maps of spheres into the classical groups. *Mem. Amer. Math. Soc.* 95 (1971).
85. Franz, W.: Über die Torsion einer Überdeckung. *J. Reine u. Angew. Math.* 173, 245 - 254 (1935).
86. Gordon, R. A.: Contributions to the theory of the Burnside ring. Dissertation, Saarbrücken 1975.
87. Gordon, R. A.: The Burnside ring of a cyclic extension of a torus. *Math. Z.* 153, 149 - 153 (19-7).
88. Green, J. A.: Axiomatic representation theory for finite groups. *J. of Pure and Applied Algebra* 1, 41 - 77 (1971).
89. Hattori, A.: Rank element of a projective module. *Nagoya J. Math.* 25, 113 - 120 (1965).
90. Hauschild, H.: Allgemeine Lage und äquivariante Homotopie. *Math. Z.* 143, 155 - 164 (1975).
91. Hauschild, H.: Äquivariante Transversalität und äquivariante Bordismentheorien. *Arch. Math.* 26, 536 - 546 (1975).
92. Hauschild, H.: Äquivariante Homotopie I. *Arch. Math.* 29, 158 - 165 (1977).
93. Hauschild, H.: Zerspaltung äquivarianter Homotopiemengen. *Math. Ann.* 230, 279 - 292 (1977).
94. Hauschild, H.: Äquivariante Whiteheadtorsion. *Manuscripta math.* 26, 63 - 82 (1978)

95. Hazewinkel, M.: Formal groups and applications. New York: Academic Press 1978.
96. Helgason, S.: Differential geometry and symmetric spaces. New York-London: Academic Press 1962.
97. Hochschild, G.: The structure of Lie groups. San Francisco: Holden-Day 1965.
98. Hurewicz, W., and H. Wallman: Dimension theory. Princeton: Princeton Univ. Press 1948.
99. Husemoller, D.: Fibre bundles. New York: McGraw-Hill 1966.
100. Illman, S.: Whitehead torsion and group actions. Ann. Acad. Sc. Fennicae Series A 588 (1974).
101. James, I. M., and Segal, G. B.: On equivariant homotopy type. Topology 17, 267 - 272 (1978).
102. Jaworowski, J. W.: Extensions of G-maps and euclidean G-retracts. Math. Z. 146, 143 - 148 (1976).
103. Karoubi, M.: K-Theory. Berlin-Heidelberg-New York: Springer 1978.
104. Kelley, J., and E. Spanier: Euler characteristics. Pacific J. Math. 26, 317 - 339 (1968).
105. Kosniowski, C.: Equivariant cohomology and stable cohomotopy. Math. Ann. 210, 83 - 104 (1974).
106. Kosniowski, C.: Actions of finite abelian groups. London: Pitman 1978.
107. Lang, S.: Algebra. Reading, Mass.: Addison-Wesley 1965.
108. Lang, S.: Algebraic number theory. Reading, Mass.: Addison-Wesley 1970.
109. Lazard, M.: Commutative formal groups. Lecture Notes in Math. 443. Berlin-Heidelberg-New York: Springer 1975.

110. Lee, Chung-Nim, and A. G. Wasserman: On the groups $JO(G)$. Mem. Amer. Math. Soc. 159 (1975).
111. Liulevicius, A.: Homotopy of linear actions: Characters tell all. Bull. Amer. Math. Soc. 84, 213 - 221 (1978).
112. Mac Lane, S.: Homology. Berlin-Göttingen-Heidelberg: Springer 1963.
113. Madsen, I.: Remarks on normal invariants from the infinite loop space view point. In: Proc. Symp. Pure Math. 32 Vol. 1: Algebraic and Geometric topology, Amer. Math. Soc. 1978, 91 - 102.
114. Meyerhoff, A., and T. Petrie: Quasi equivalence of G modules. Topology 15, 69 - 75 (1976).
115. Milnor, J.: Construction of universal bundles. II. Ann. of Math. 63, 430 - 436 (1956).
116. Milnor, J.: Whitehead torsion. Bull. Amer. Math. Soc. 72, 358 - 426 (1966).
117. Milnor, J., and D. Husemoller: Symmetric bilinear forms. Berlin-Heidelberg-New York: Springer 1973.
118. Oliver, R.: Fixed point set of group actions on finite acyclic complexes. Comment. math. Helv. 50, 155 - 177 (1975).
119. Oliver, R.: Fixed points of disks actions. Bull. Amer. math. Soc. 82, 279 - 280 (1976).
120. Oliver, R.: G -actions on disks and permutation representations. II. Math. Z. 157, 237 - 263 (1977).
121. Oliver, R.: G -actions on disks and permutation representations. J. Algebra 50, 44 - 62 (1978).
122. Oliver, R.: Group actions on disks, integral permutation representations and the Burnside ring. In. Proc. Symp. Pure Math. 32 Vol. 1: Algebraic and Geometric topology. Amer. Math. Soc. 1978, 339 - 346.

123. Olum, P.: Mappings of manifolds and the notion of degree. *Ann. of Math.* 58, 458 - 480 (1953).
124. Palais, R. S.: The classification of G-spaces. *Mem. Amer. Math. Soc.* 36 (1960).
125. Pardon, W.: The exact sequence of a localization for Witt groups. In: *Algebraic K-Theory, Evanston 1976. Lecture Notes in Math.* 551. Berlin-Heidelberg-New York: Springer 1976.
126. Petrie, T.: G Surgery I - A survey. In: *Alg. and geom. topology. Proc. Santa Barbara. Lecture Notes in math.* 664. Springer-Verlag 196 - 233 (1978).
127. Quillen, D.: The spectrum of an equivariant cohomology ring I. *Ann. of Math.* 94, 549 - 572 (1971). II. *Ann. of Math.* 94, 573 - 602 (1971).
128. Quillen, D.: The Adams conjecture. *Topology* 10, 67 - 80 (1971).
129. Quinn, F.: Finite nilpotent group actions on finite complexes. In: *Geometric appl. of homotopy theory I. Lecture notes in math.* 657. Springer-Verlag. 375 - 407 (1978).
130. Raghunatan, M. S.: *Discrete Subgroup of Liegroups.* Berlin-Heidelberg-New York: Springer 1972.
131. Raußen, M.: Hurewicz isomorphism and Whitehead theorems in pro-categories. *Arch. Math.* 30, 153 - 164 (1978).
132. de Rham, G.: Complexes à automorphismes et homéomorphie différentiables. *Ann. Inst. Fourier, Grenoble* 2, 51 - 67 (1950).
133. Ritter, J.: Ein Induktionssatz für rationale Charaktere von nilpotenten Gruppen. *Journal f. d. reine u. angew. Math.* 254, 133 - 151 (1972).
134. Rueff, M.: Beiträge zur Untersuchung der Abbildungen von Mannigfaltigkeiten. *Composition Math.* 6, 161 - 202 (1939).
135. Roquette, P.: Realisierung von Darstellungen endlicher nilpotenter

- Gruppen. Arch. Math. 9, 241 - 250 (1958).
136. Rubinsztein, R. L.: On the equivariant homotopy of spheres. Preprint 58. Polish Academy of Sciences 1973.
137. Rymer, N. W.: Burnside ring and the Euler characteristic of a symmetric power. Preprint, School of Math. Univ. College North Wales, Bangor 1975.
138. Schultz, R.: Homotopy decompositions of equivariant function spaces. I. Math. Z. 131, 49 - 75 (1973). II. Math. Z. 132, 69 - 80 (1973).
139. Schultz, R.: On the topological classification of linear representations. Topology 16, 263 - 269 (1977).
140. Schwänzl, R.: Der Burnside ring der speziellen orthogonalen Gruppe der Dimension drei. Diplomarbeit, Saarbrücken 1975.
141. Schwänzl, R.: Koeffizienten im Burnside ring. Arch. Math. 29, 621 - 622 (1977).
142. Segal, G. B.: Equivariant K-theory. Publ. Math. IHES 34, 129 - 151 (1968).
143. Segal, G. B.: The representation ring of a compact Lie group. Publ. math. IHES 34, 113 - 128 (1968).
144. Segal, G. B.: Classifying spaces and spectral sequences. Publ. math. IHES 34, 105 - 112 (1968).
145. Segal, G. B.: Equivariant stable homotopy theory. Actes Congrès intern Math. Tome 2, 59 - 63 (1970).
146. Segal, G. B.: Permutation representations of finite p-groups. Quart. J. Math. Oxford (2), 23, 375 - 381 (1972).
147. Serre, J.-P.: Représentations linéaires des groupes finis. 2. éd. Paris: Hermann 1971.
148. Serre, J.-P.: Cohomologie des groupes discrets. Ann. Math.

Studies 70. Princeton Univ. Press 77 - 169 (1971).

149. Siebeneicher, C.: λ -Ringstrukturen auf dem Burnside-Ring der Permutationsdarstellungen einer endlichen Gruppe. Math. Zeitschrift 146, 223 - 238 (1976).
150. Siegel, C. L.: Gesammelte Abhandlungen I. Springer 1966.
151. Snaitch, J.: J-equivalence of group representations. Proc. Camb. Phil. Soc. 70, 9 - 14 (1971).
152. Spanier, E. H.: Algebraic topology. New York: McGraw-Hill 1966.
153. Stallings, J. R.: Centerless groups - an algebraic formulation of Gottlieb's theorem. Topology 4, 129 - 134 (1965).
154. Steenrod, N.: The topology of fibre bundles. Princeton Univ. Press 1951.
155. Stong, R. E.: Unoriented bordism and actions of finite groups. Mem. Amer. Math. Soc. 103 (1970).
156. Strøm, A.: Note on cofibrations. Math. Scand. 19, 11 - 14 (1966).
II. Math. Scand. 22, 130 - 142 (1968).
157. Sullivan, D.: Genetics of homotopy theory and the Adams conjecture, Ann. of Math. 100, 1 - 79 (1974).
158. Swan, R. G., and E. G. Evans: K-Theory of finite groups and orders. Lecture Notes in Math. 149. Berlin-Heidelberg-New York: Springer 1970.
159. Szczarba, R.: On tangent bundles of fibre spaces and quotient spaces. Amer. J. Math. 86, 685 - 697 (1964).
160. Tornehave, J.: Equivariant maps of spheres with conjugate orthogonal actions. Matematisk Institut Aarhus Universitet. Preprint Series 1977/78 No. 4.
161. Traczyk, P.: On the G-homotopy equivalence of spheres of representations. Math. Z. 161, 257 - 261 (1978).

162. Verdier, J. L.: Caractéristique d'Euler-Poincaré. Bull. Soc. Math. France 101, 441 - 445 (1973).
163. Wall, C. T. C.: Rational Euler characteristics. Proc. Cambridge Phil. Soc. 57, 182 - 183 (1961).
164. Wall, C. T. C.: Quadratic forms on finite groups and related topics. Topology 2, 281 - 298 (1963).
165. Wasserman, A. G.: Equivariant differential topology. Topology 8, 127 - 150 (1969).
166. Watts, Ch.: Intrinsic characterisation of some additive functors. Proc. Amer. Math. Soc. 11, 5 - 8 (1960).
167. Wilson, G.: K-theory invariants for unitary G-bordism. Quart. J. Math. Oxford (2) 24, 499 - 526 (1973).
168. Wirthmüller, K.: Equivariant homology and duality. Manuscripta math. 11, 373 - 390 (1974).
169. Wolf, J. A.: Spaces of constant curvature. New York: McGraw-Hill 1967.
170. Zarelua, A.: On finite groups of transformations. Proc. of symposium on topology and its applications. Herceg-Novci, 334-339 (1968).
171. Zassenhaus, H.: Beweis eines Satzes über diskrete Gruppen. Abh. Math. Sem. Harsisch Univ. 12, 289 - 312 (1938).

Notation

G	compact Lie group
$H \triangleleft G$	H closed subgroup of G
$H \triangleleft\!\triangleleft G$	H closed normal subgroup of G
$NH = N_G H$	normalizer of H in G
$WH = NH/H$	
$H \sim K$	H conjugate to K
(H)	conjugacy class of H
$(H) \triangleleft (K)$	H subconjugate to K
G -space X	left continuous action of G on X
G_x	isotropy group at $x \in X$
X/G	orbit space of X
$X^H = \{x \in X \mid hx = x \text{ for all } h \in H\}$	H -fixed point set of X
$X_{(H)} = \{x \in X \mid (G_x) = (H)\}$	H -orbit bundle of H
$X_H = \{x \in X \mid G_x = X\}$	
$G \times_H X$	quotient $G \times X$ with respect to $(g, x) \sim (gh, h^{-1}x), h \in H$
$ S $	cardinality of the set S