

---

## References

- [1] J. Adámek and J. Rosický, *Locally presentable and accessible categories*, London Mathematical Society Lecture Note Series, 189, Cambridge University Press, Cambridge, 1994.
- [2] K. Akin and D. A. Buchsbaum, Characteristic-free representation theory of the general linear group. II. Homological considerations, *Adv. Math.* **72** (1988), no. 2, 171–210.
- [3] K. Akin, D. A. Buchsbaum and J. Weyman, Schur functors and Schur complexes, *Adv. Math.* **44** (1982), no. 3, 207–278.
- [4] L. Alonso Tarrío, A. Jeremías López and M. J. Souto Salorio, Localization in categories of complexes and unbounded resolutions, *Can. J. Math.* **52** (2000), no. 2, 225–247.
- [5] L. Angeleri Hügel, D. Happel and H. Krause (eds.), *Handbook of tilting theory*, London Mathematical Society Lecture Note Series, 332, Cambridge University Press, Cambridge, 2007.
- [6] I. Assem and A. Skowroński, Iterated tilted algebras of type  $\tilde{\mathbf{A}}_n$ , *Math. Z.* **195** (1987), no. 2, 269–290.
- [7] M. Auslander, Coherent functors, in *Proc. Conf. categorical algebra (La Jolla, Calif., 1965)*, 189–231, Springer, New York, 1966.
- [8] M. Auslander, Comments on the functor Ext, *Topology* **8** (1969), 151–166.
- [9] M. Auslander, Representation theory of Artin algebras II, *Commun. Algebra* **1** (1974), 269–310.
- [10] M. Auslander, Large modules over Artin algebras, in *Algebra, topology, and category theory (a collection of papers in honor of Samuel Eilenberg)*, 1–17, Academic Press, New York, 1976.
- [11] M. Auslander, Functors and morphisms determined by objects, in *Representation theory of algebras (Proc. Conf., Temple Univ., Philadelphia, Pa., 1976)*, 1–244, Lecture Notes in Pure and Applied Mathematics, 37, Dekker, New York, 1978.
- [12] M. Auslander and D. A. Buchsbaum, Homological dimension in noetherian rings II, *Trans. Am. Math. Soc.* **88** (1958), 194–206.
- [13] M. Auslander and R.-O. Buchweitz, The homological theory of maximal Cohen–Macaulay approximations, *Mém. Soc. Math. Fr.* **38** (1989), 5–37.
- [14] M. Auslander, M. I. Platzeck and I. Reiten, Coxeter functors without diagrams, *Trans. Am. Math. Soc.* **250** (1979), 1–46.

- [15] M. Auslander and I. Reiten, Representation theory of Artin algebras. III. Almost split sequences, *Commun. Algebra* **3** (1975), 239–294.
- [16] M. Auslander and I. Reiten, Applications of contravariantly finite subcategories, *Adv. Math.* **86** (1991), no. 1, 111–152.
- [17] M. Auslander and I. Reiten, Cohen–Macaulay and Gorenstein Artin algebras, in *Representation theory of finite groups and finite-dimensional algebras (Bielefeld, 1991)*, 221–245, *Progress in Mathematics*, 95, Birkhäuser, Basel, 1991.
- [18] M. Auslander, I. Reiten and S. O. Smalø, *Representation theory of Artin algebras*, corrected reprint of the 1995 original, *Cambridge Studies in Advanced Mathematics*, 36, Cambridge University Press, Cambridge, 1997.
- [19] G. Azumaya, Corrections and supplemetaries to my paper concerning Krull–Remak–Schmidt’s theorem, *Nagoya Math. J.* **1** (1950), 117–124.
- [20] R. Baer, Erweiterung von Gruppen und ihre Isomorphismen, *Math. Z.* **38** (1934), no. 1, 375–416.
- [21] R. Baer, Abelian groups that are direct summands of every containing abelian group, *Bull. Am. Math. Soc.* **46** (1940), 800–806.
- [22] H. Bass, On the ubiquity of Gorenstein rings, *Math. Z.* **82** (1963), 8–28.
- [23] H. Bass and M. P. Murthy, Grothendieck groups and Picard groups of abelian group rings, *Ann. Math. (Ser. 2)* **86** (1967), 16–73.
- [24] P. Baumann and C. Kassel, The Hall algebra of the category of coherent sheaves on the projective line, *J. Reine Angew. Math.* **533** (2001), 207–233.
- [25] A. A. Beilinson, Coherent sheaves on  $\mathbf{P}^n$  and problems in linear algebra, *Funktional. Anal. Prilozhen.* **12** (1978), no. 3, 68–69.
- [26] A. A. Beilinson, J. Bernštejn and P. Deligne, Faisceaux pervers, in *Analysis and topology on singular spaces, I (Luminy, 1981)*, 5–171, *Astérisque*, 100, Société Mathématique de France, Paris, 1982.
- [27] A. Beilinson, V. Ginzburg and W. Soergel, Koszul duality patterns in representation theory, *J. Am. Math. Soc.* **9** (1996), no. 2, 473–527.
- [28] A. Beligiannis and I. Reiten, *Homological and homotopical aspects of torsion theories*, Memoirs of the American Mathematical Society, 188, American Mathematical Society, Providence, RI, 2007, no. 883.
- [29] D. J. Benson, *Representations and cohomology II*, *Cambridge Studies in Advanced Mathematics*, 31, Cambridge University Press, Cambridge, 1991.
- [30] D. J. Benson, *Representations of elementary abelian  $p$ -groups and vector bundles*, Cambridge Tracts in Mathematics, 208, Cambridge University Press, Cambridge, 2017.
- [31] D. Benson, S. B. Iyengar, H. Krause and J. Pevtsova, Local duality for representations of finite group schemes, *Compos. Math.* **155** (2019), no. 2, 424–453.
- [32] D. Benson and H. Krause, Pure injectives and the spectrum of the cohomology ring of a finite group, *J. Reine Angew. Math.* **542** (2002), 23–51.
- [33] G. M. Bergman, Coproducts and some universal ring constructions, *Trans. Am. Math. Soc.* **200** (1974), 33–88.
- [34] I. N. Bernštejn, I. M. Gel’fand and S. I. Gel’fand, A certain category of  $\mathfrak{g}$ -modules, *Funktional. Anal. Prilozhen.* **10** (1976), no. 2, 1–8.
- [35] I. N. Bernštejn, I. M. Gel’fand and S. I. Gel’fand, Algebraic vector bundles on  $\mathbf{P}^n$  and problems of linear algebra, *Funktional. Anal. Prilozhen.* **12** (1978), no. 3, 66–67.

- [36] I. N. Bernštejn, I. M. Gel'fand and V. A. Ponomarev, Coxeter functors, and Gabriel's theorem, *Usp. Mat. Nauk* **28** (1973), no. 2(170), 19–33.
- [37] M. Bökstedt and A. Neeman, Homotopy limits in triangulated categories, *Compos. Math.* **86** (1993), no. 2, 209–234.
- [38] A. I. Bondal and M. M. Kapranov, Representable functors, Serre functors, and mutations, *Izv. Akad. Nauk SSSR Ser. Mat.* **53** (1989), no. 6, 1183–1205, 1337; translation in *Math. USSR-Izv.* **35** (1990), no. 3, 519–541.
- [39] N. Bourbaki, *Éléments de mathématique: Algèbre*, Chapters 4–7, Lecture Notes in Mathematics, 864, Masson, Paris, 1981.
- [40] R. Brauer and C. Nesbitt, On the regular representations of algebras, *Proc. Natl. Acad. Sci. U.S.A.* **23** (1937), 236–240.
- [41] S. Brenner and M. C. R. Butler, Generalizations of the Bernštejn Gel'fand Ponomarev reflection functors, in *Representation theory, II (Proc. Second Int. Conf., Carleton Univ., Ottawa, Ont., 1979)*, 103–169, Lecture Notes in Mathematics, 832, Springer, Berlin, 1980.
- [42] E. H. Brown, Jr., Cohomology theories, *Ann. Math. (Ser. 2)* **75** (1962), 467–484.
- [43] A. B. Buan and H. Krause, Tilting and cotilting for quivers and type  $\tilde{A}_n$ , *J. Pure Appl. Algebra* **190** (2004), 1–21.
- [44] R.-O. Buchweitz, Maximal Cohen–Macaulay modules and Tate-cohomology over Gorenstein rings, Universität Hannover, 1986.
- [45] H. Cartan, *Algèbres d'Eilenberg–MacLane*, Exposés 2–11, Sémin. H. Cartan, Éc. Normale Sup. (1954–1955), Secrétariat Mathématique, Paris, 1956.
- [46] H. Cartan and S. Eilenberg, *Homological algebra*, Princeton University Press, Princeton, NJ, 1956.
- [47] R. W. Carter and G. Lusztig, On the modular representations of the general linear and symmetric groups, *Math. Z.* **136** (1974), 193–242.
- [48] A.-L. Cauchy, Mémoire sur les fonctions alternées et sur les sommes alternées, Exercices d'analyse et de physique mathématique, ii (1841), 151–159; Œuvres complètes, 2ème série xii, 173–182, Gauthier-Villars, Paris, 1916.
- [49] S. U. Chase, Direct products of modules, *Trans. Am. Math. Soc.* **97** (1960), 457–473.
- [50] S. U. Chase, On direct sums and products of modules, *Pacific J. Math.* **12** (1962), 847–854.
- [51] T. Church, J. S. Ellenberg, B. Farb and R. Nagpal, FI-modules over Noetherian rings, *Geom. Topol.* **18** (2014), no. 5, 2951–2984.
- [52] E. Cline, B. Parshall and L. Scott, Finite-dimensional algebras and highest weight categories, *J. Reine Angew. Math.* **391** (1988), 85–99.
- [53] P. M. Cohn, On the free product of associative rings, *Math. Z.* **71** (1959), 380–398.
- [54] P. M. Cohn, *Free rings and their relations*, Academic Press, London, 1971.
- [55] L. Corry, *Modern algebra and the rise of mathematical structures*, second edition, Birkhäuser, Basel, 2004.
- [56] W. Crawley-Boevey, Tame algebras and generic modules, *Proc. London Math. Soc. (Ser. 3)* **63** (1991), no. 2, 241–265.
- [57] W. Crawley-Boevey, Modules of finite length over their endomorphism rings, in *Representations of algebras and related topics (Tsukuba, 1990)*, 127–184, London Mathematical Society Lecture Note Series, 168, Cambridge University Press, Cambridge, 1992.

- [58] W. Crawley-Boevey, Locally finitely presented additive categories, *Commun. Algebra* **22** (1994), no. 5, 1641–1674.
- [59] W. Crawley-Boevey, Infinite-dimensional modules in the representation theory of finite-dimensional algebras, in *Algebras and modules, I (Trondheim, 1996)*, 29–54, CMS Conference Proceedings, 23, American Mathematical Society, Providence, RI, 1998.
- [60] W. Crawley-Boevey, Classification of modules for infinite-dimensional string algebras, *Trans. Am. Math. Soc.* **370** (2018), no. 5, 3289–3313.
- [61] C. de Concini, D. Eisenbud and C. Procesi, Young diagrams and determinantal varieties, *Invent. Math.* **56** (1980), no. 2, 129–165.
- [62] P. Deligne, Cohomologie à supports propres, in *SGA 4, Théorie des Topos et Cohomologie Etale des Schémas*, vol. 3, 250–480, Lecture Notes in Mathematics, 305, Springer, Heidelberg, 1973.
- [63] A. Djament, La propriété noethérienne pour les foncteurs entre espaces vectoriels [d’après A. Putman, S. Sam et A. Snowden], *Astérisque*, 380, Séminaire Bourbaki, Vol. 2014/2015 (2016), Exp. No. 1090, 35–60.
- [64] V. Dlab and C. M. Ringel, Quasi-hereditary algebras, *Illinois J. Math.* **33** (1989), no. 2, 280–291.
- [65] V. Dlab and C. M. Ringel, The module theoretical approach to quasi-hereditary algebras, in *Representations of algebras and related topics (Kyoto, 1990)*, 200–224, London Mathematical Society Lecture Note Series, 168, Cambridge University Press, Cambridge, 1992.
- [66] S. Donkin, A filtration for rational modules, *Math. Z.* **177** (1981), no. 1, 1–8.
- [67] S. Donkin, On Schur algebras and related algebras I, *J. Algebra* **104** (1986), no. 2, 310–328.
- [68] S. Donkin, On tilting modules for algebraic groups, *Math. Z.* **212** (1993), no. 1, 39–60.
- [69] P. Doubilet, G.-C. Rota and J. Stein, On the foundations of combinatorial theory IX. Combinatorial methods in invariant theory, *Stud. Appl. Math.* **53** (1974), 185–216.
- [70] B. Eckmann and A. Schopf, Über injektive Moduln, *Arch. Math. (Basel)* **4** (1953), 75–78.
- [71] S. Eilenberg, Homological dimension and syzygies, *Ann. Math. (Ser. 2)* **64** (1956), 328–336.
- [72] S. Eilenberg and S. MacLane, Group extensions and homology, *Ann. Math. (Ser. 2)* **43** (1942), 757–831.
- [73] S. Eilenberg and T. Nakayama, On the dimension of modules and algebras II. Frobenius algebras and quasi-Frobenius rings, *Nagoya Math. J.* **9** (1955), 1–16.
- [74] J. Franke, On the Brown representability theorem for triangulated categories, *Topology* **40** (2001), no. 4, 667–680.
- [75] P. Freyd, Representations in abelian categories, in *Proc. Conf. categorical algebra (La Jolla, Calif., 1965)*, 95–120, Springer, New York, 1966.
- [76] E. M. Friedlander and A. Suslin, Cohomology of finite group schemes over a field, *Invent. Math.* **127** (1997), no. 2, 209–270.
- [77] L. Fuchs, *Infinite abelian groups*, vol. I, Pure and Applied Mathematics, 36, Academic Press, New York, 1970.

- [78] W. Fulton, *Young tableaux*, London Mathematical Society Student Texts, 35, Cambridge University Press, Cambridge, 1997.
- [79] P. Gabriel, Des catégories abéliennes, Bull. Soc. Math. Fr. **90** (1962), 323–448.
- [80] P. Gabriel, Auslander–Reiten sequences and representation-finite algebras, in *Representation theory, I (Proc. Workshop, Carleton Univ., Ottawa, Ont., 1979)*, 1–71, Lecture Notes in Mathematics, 831, Springer, Berlin, 1980.
- [81] P. Gabriel, *Un jeu? Les nombres de Catalan*, UniZürich, Mitteilungsblatt des Rektorates **6** (1981), 4–5.
- [82] P. Gabriel and U. Oberst, Spektralkategorien und reguläre Ringe im von Neumannschen Sinn, Math. Z. **92** (1966), 389–395.
- [83] P. Gabriel and A. V. Roiter, *Representations of finite-dimensional algebras* [with a chapter by B. Keller], Encyclopaedia of Mathematical Sciences, 73, Algebra, VIII, Springer, Berlin, 1992.
- [84] P. Gabriel and F. Ulmer, *Lokal präsentierbare Kategorien*, Lecture Notes in Mathematics, 221, Springer, Berlin, 1971.
- [85] P. Gabriel and M. Zisman, *Calculus of fractions and homotopy theory*, Springer, New York, 1967.
- [86] S. Garavaglia, Decomposition of totally transcendental modules, J. Symbolic Logic **45** (1980), no. 1, 155–164.
- [87] W. Geigle, The Krull–Gabriel dimension of the representation theory of a tame hereditary Artin algebra and applications to the structure of exact sequences, Manuscripta Math. **54** (1985), no. 1–2, 83–106.
- [88] W. Geigle and H. Lenzing, A class of weighted projective curves arising in representation theory of finite-dimensional algebras, in *Singularities, representation of algebras, and vector bundles (Lambrecht, 1985)*, 265–297, Lecture Notes in Mathematics, 1273, Springer, Berlin, 1987.
- [89] W. Geigle and H. Lenzing, Perpendicular categories with applications to representations and sheaves, J. Algebra **144** (1991), no. 2, 273–343.
- [90] Ch. Geiß and I. Reiten, Gentle algebras are Gorenstein, in *Representations of algebras and related topics*, 129–133, Fields Institute Communications, 45, American Mathematical Society, Providence, RI, 2005.
- [91] E. L. Green and D. Zacharia, The cohomology ring of a monomial algebra, Manuscripta Math. **85** (1994), no. 1, 11–23.
- [92] J. A. Green, *Polynomial representations of  $GL_n$* , Lecture Notes in Mathematics, 830, Springer, Berlin, 1980.
- [93] J. A. Green, Combinatorics and the Schur algebra, J. Pure Appl. Algebra **88** (1993), no. 1–3, 89–106.
- [94] A. Grothendieck, Sur quelques points d’algèbre homologique, Tôhoku Math. J. (2) **9** (1957), 119–221.
- [95] A. Grothendieck, The cohomology theory of abstract algebraic varieties, in *Proc. Int. Congress of mathematicians (Edinburgh, 1958)*, 103–118, Cambridge University Press, New York, 1960.
- [96] A. Grothendieck, Groupes de classes des catégories abéliennes et triangulées, complexes parfaits, in *Cohomologie l-adique et fonctions L*, 351–371, Lecture Notes in Mathematics, 589, Springer, Berlin, 1977.
- [97] A. Grothendieck and J. A. Dieudonné, *Eléments de géométrie algébrique. I*, Grundlehren der Mathematischen Wissenschaften, 166, Springer, Berlin, 1971.

- [98] A. Grothendieck and J. L. Verdier, Préfaisceaux, in *SGA 4, Théorie des Topos et Cohomologie Étale des Schémas*, vol. 1, *Théorie des Topos*, 1–217, Lecture Notes in Mathematics, 269, Springer, Heidelberg, 1972–1973.
- [99] L. Gruson and C. U. Jensen, Deux applications de la notion de  $L$ -dimension, *C. R. Acad. Sci. Paris Sér. A–B* **282** (1976), no. 1, A23–A24.
- [100] L. Gruson and C. U. Jensen, Dimensions cohomologiques reliées aux foncteurs  $\lim^{(i)}$ , in *Séminaire d'Algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1980)*, 234–294, Lecture Notes in Mathematics, 867, Springer, Berlin, 1981.
- [101] D. Happel, On the derived category of a finite-dimensional algebra, *Comment. Math. Helv.* **62** (1987), no. 3, 339–389.
- [102] D. Happel, *Triangulated categories in the representation theory of finite-dimensional algebras*, London Mathematical Society Lecture Note Series, 119, Cambridge University Press, Cambridge, 1988.
- [103] D. Happel, Auslander–Reiten triangles in derived categories of finite-dimensional algebras, *Proc. Am. Math. Soc.* **112** (1991), no. 3, 641–648.
- [104] D. Happel, A characterization of hereditary categories with tilting object, *Invent. Math.* **144** (2001), no. 2, 381–398.
- [105] D. Happel, I. Reiten and S. O. Smalø, *Tilting in abelian categories and quasitilted algebras*, Memoirs of the American Mathematical Society, 120, American Mathematical Society, Providence, RI, 1996, no. 575.
- [106] R. Hartshorne, *Residues and duality*, Lecture notes of a seminar on the work of A. Grothendieck, given at Harvard 1963/64 [with an appendix by P. Deligne], Lecture Notes in Mathematics, 20, Springer, Berlin, 1966.
- [107] A. Heller, Homological algebra in abelian categories, *Ann. Math. (Ser. 2)* **68** (1958), 484–525.
- [108] A. Heller, The loop-space functor in homological algebra, *Trans. Am. Math. Soc.* **96** (1960), 382–394.
- [109] H.-W. Henn, J. Lannes and L. Schwartz, The categories of unstable modules and unstable algebras over the Steenrod algebra modulo nilpotent objects, *Am. J. Math.* **115** (1993), no. 5, 1053–1106.
- [110] I. Herzog, Elementary duality of modules, *Trans. Am. Math. Soc.* **340** (1993), no. 1, 37–69.
- [111] I. Herzog, The Ziegler spectrum of a locally coherent Grothendieck category, *Proc. London Math. Soc. (Ser. 3)* **74** (1997), no. 3, 503–558.
- [112] D. Hilbert, Über die Theorie der algebraischen Formen, *Math. Ann.* **36** (1890), no. 4, 473–534.
- [113] M. Hochster, Prime ideal structure in commutative rings, *Trans. Am. Math. Soc.* **142** (1969), 43–60.
- [114] D. Hughes and J. Waschbüsch, Trivial extensions of tilted algebras, *Proc. London Math. Soc. (Ser. 3)* **46** (1983), no. 2, 347–364.
- [115] J. E. Humphreys, *Representations of semisimple Lie algebras in the BGG category  $\mathcal{O}$* , Graduate Studies in Mathematics, 94, American Mathematical Society, Providence, RI, 2008.
- [116] Y. Iwanaga, On rings with finite self-injective dimension, *Commun. Algebra* **7** (1979), no. 4, 393–414.
- [117] J. P. Jans, On the indecomposable representations of algebras, *Ann. Math. (Ser. 2)* **66** (1957), 418–429.

- [118] C. U. Jensen and H. Lenzing, *Model-theoretic algebra with particular emphasis on fields, rings, modules*, Gordon and Breach Science Publishers, New York, 1989.
- [119] I. Kaplansky, *Infinite abelian groups*, University of Michigan Press, Ann Arbor, MI, 1954, revised 1969.
- [120] B. Keller, Chain complexes and stable categories, *Manuscripta Math.* **67** (1990), 379–417.
- [121] B. Keller, Deriving DG categories, *Ann. Sci. Éc. Norm. Supér. (Sér. 4)* **27** (1994), no. 1, 63–102.
- [122] B. Keller and H. Krause, Tilting preserves finite global dimension, *C. R. Math. Acad. Sci. Paris* **358** (2020), no. 5, 563–571.
- [123] B. Keller and D. Vossieck, Sous les catégories dérivées, *C. R. Acad. Sci. Paris Sér. I Math.* **305** (1987), no. 6, 225–228.
- [124] R. Kiełpiński, On  $\Gamma$ -pure injective modules, *Bull. Acad. Polon. Sci. Sér. Sci. Math. Astronom. Phys.* **15** (1967), 127–131.
- [125] H. Krause, The spectrum of a locally coherent category, *J. Pure Appl. Algebra* **114** (1997), no. 3, 259–271.
- [126] H. Krause, Exactly definable categories, *J. Algebra* **201** (1998), no. 2, 456–492.
- [127] H. Krause, A Brown representability theorem via coherent functors, *Topology* **41** (2002), no. 4, 853–861.
- [128] H. Krause, Coherent functors and covariantly finite subcategories, *Algebras Represent. Theory* **6** (2003), no. 5, 475–499.
- [129] H. Krause, The stable derived category of a Noetherian scheme, *Compos. Math.* **141** (2005), no. 5, 1128–1162.
- [130] H. Krause, Koszul, Ringel and Serre duality for strict polynomial functors, *Compos. Math.* **149** (2013), no. 6, 996–1018.
- [131] H. Krause, Krull–Schmidt categories and projective covers, *Expo. Math.* **33** (2015), no. 4, 535–549.
- [132] H. Krause, Completing perfect complexes [with appendices by T. Barthel and B. Keller], *Math. Z.* **296** (2020), 1387–1427.
- [133] H. Krause and C. M. Ringel, *Infinite length modules*, Trends in Mathematics, Birkhäuser, Basel, 2000.
- [134] H. Krause and M. Saorín, On minimal approximations of modules, in *Trends in the representation theory of finite-dimensional algebras (Seattle, WA, 1997)*, 227–236, Contemporary Mathematics, 229, American Mathematical Society, Providence, RI, 1998.
- [135] H. Krause and D. Vossieck, Length categories of infinite height, in *Geometric and topological aspects of the representation theory of finite groups*, 213–234, Springer Proceedings in Mathematics and Statistics, 242, Springer, Cham, 2018.
- [136] T. Y. Lam, *A first course in noncommutative rings*, Graduate Texts in Mathematics, 131, Springer, New York, 1991.
- [137] H. Lenzing, Über die Funktoren  $\text{Ext}^1(\cdot, E)$  und  $\text{Tor}_1(\cdot, E)$ , Dissertation, FU Berlin, 1964.
- [138] H. Lenzing, Endlich präsentierbare Moduln, *Arch. Math. (Basel)* **20** (1969), 262–266.

- [139] H. Lenzing, Auslander's work on Artin algebras, in *Algebras and modules, I (Trondheim, 1996)*, 83–105, CMS Conference Proceedings, 23, American Mathematical Society, Providence, RI, 1998.
- [140] I. G. Macdonald, *Symmetric functions and Hall polynomials*, second edition, Oxford Mathematical Monographs, Oxford University Press, New York, 1995.
- [141] S. Mac Lane, *Homology*, Die Grundlehren der mathematischen Wissenschaften, 114, Academic Press, New York; Springer, Berlin, 1963.
- [142] S. Mac Lane, *Categories for the working mathematician*, second edition, Graduate Texts in Mathematics, 5, Springer, New York, 1998.
- [143] E. Matlis, Injective modules over Noetherian rings, *Pacific J. Math.* **8** (1958), 511–528.
- [144] J. Milnor, On axiomatic homology theory, *Pacific J. Math.* **12** (1962), 337–341.
- [145] B. Mitchell, Rings with several objects, *Adv. Math.* **8** (1972), 1–161.
- [146] M. Nagata, *Local rings*, Interscience Tracts in Pure and Applied Mathematics, 13, Interscience Publishers, New York, 1962.
- [147] A. Neeman, The derived category of an exact category, *J. Algebra* **135** (1990), no. 2, 388–394.
- [148] A. Neeman, The Grothendieck duality theorem via Bousfield's techniques and Brown representability, *J. Am. Math. Soc.* **9** (1996), no. 1, 205–236.
- [149] A. Neeman, Brown representability for the dual, *Invent. Math.* **133** (1998), no. 1, 97–105.
- [150] A. Neeman, *Triangulated categories*, Annals of Mathematics Studies, 148, Princeton University Press, Princeton, NJ, 2001.
- [151] O. Ore, Linear equations in non-commutative fields, *Ann. Math. (Ser. 2)* **32** (1931), no. 3, 463–477.
- [152] D. O. Orlov, Triangulated categories of singularities and D-branes in Landau–Ginzburg models, *Proc. Steklov Inst. Math.* **2004**, no. 3(246), 227–248; translated from *Tr. Mat. Inst. Steklova* **246** (2004), *Algebr. Geom. Metody, Svyazi Prilozh.*, 240–262.
- [153] D. O. Orlov, Formal completions and idempotent completions of triangulated categories of singularities, *Adv. Math.* **226** (2011), no. 1, 206–217.
- [154] B. L. Osofsky, Homological dimension and cardinality, *Trans. Am. Math. Soc.* **151** (1970), 641–649.
- [155] Z. Papp, On algebraically closed modules, *Publ. Math. Debrecen* **6** (1959), 311–327.
- [156] B. Pareigis, *Categories and functors*, translated from the German, Pure and Applied Mathematics, 39, Academic Press, New York, 1970.
- [157] B. J. Parshall, Finite-dimensional algebras and algebraic groups, in *Classical groups and related topics (Beijing, 1987)*, 97–114, Contemporary Mathematics, 82, American Mathematical Society, Providence, RI, 1989.
- [158] B. J. Parshall and L. L. Scott, Derived categories, quasi-hereditary algebras, and algebraic groups, in *Proc. Ottawa—Moosonee Workshop in algebra (Ottawa, 1987)*, 1–104, Carleton Mathematical Lecture Notes, 3, Carleton University, Ottawa, Ont., 1988.
- [159] N. Popescu and P. Gabriel, Caractérisation des catégories abéliennes avec générateurs et limites inductives exactes, *C. R. Acad. Sci. Paris* **258** (1964), 4188–4190.

- [160] M. Prest, Remarks on elementary duality, *Ann. Pure Appl. Logic* **62** (1993), no. 2, 185–205.
- [161] M. Prest, Ziegler spectra of tame hereditary algebras, *J. Algebra* **207** (1998), no. 1, 146–164.
- [162] M. Prest, *Purity, spectra and localisation*, Encyclopedia of Mathematics and its Applications, 121, Cambridge University Press, Cambridge, 2009.
- [163] H. Prüfer, Untersuchungen über die Zerlegbarkeit der abzählbaren primären Abelschen Gruppen, *Math. Z.* **17** (1923), no. 1, 35–61.
- [164] D. Puppe, On the structure of stable homotopy theory, in *Colloquium on algebraic topology*, 65–71, Aarhus Universitet Matematisk Institut, Aarhus, 1962.
- [165] D. Quillen, Higher algebraic  $K$ -theory. I, in *Algebraic  $K$ -theory, I: Higher  $K$ -theories (Proc. Conf., Battelle Memorial Inst., Seattle, Wash., 1972)*, 85–147, Lecture Notes in Mathematics, 341, Springer, Berlin, 1973.
- [166] A. Ranicki, *Non-commutative localization in algebra and topology*, Proc. Workshop, Edinburgh, April 29–30, 2002, London Mathematical Society Lecture Note Series, 330, Cambridge University Press, Cambridge, 2006.
- [167] D. C. Ravenel, Localization with respect to certain periodic homology theories, *Am. J. Math.* **106** (1984), no. 2, 351–414.
- [168] I. Reiten and M. Van den Bergh, Noetherian hereditary abelian categories satisfying Serre duality, *J. Am. Math. Soc.* **15** (2002), no. 2, 295–366.
- [169] G. Richter, Noetherian semigroup rings with several objects, in *Group and semigroup rings (Johannesburg, 1985)*, 231–246, North-Holland Mathematical Studies, 126, North-Holland, Amsterdam, 1986.
- [170] J. Rickard, Morita theory for derived categories, *J. London Math. Soc. (Ser. 2)* **39** (1989), no. 3, 436–456.
- [171] C. M. Ringel, Infinite-dimensional representations of finite-dimensional hereditary algebras, in *Symposia Mathematica*, vol. XXIII (*Conf. abelian groups and their relationship to the theory of modules, INDAM, Rome, 1977*), 321–412, Academic Press, London, 1979.
- [172] C. M. Ringel, The canonical algebras, in *Topics in algebra, Part 1 (Warsaw, 1988)*, 407–432, Banach Center Publications, 26, Part 1, PWN, Warsaw, 1990.
- [173] C. M. Ringel, The category of modules with good filtrations over a quasi-hereditary algebra has almost split sequences, *Math. Z.* **208** (1991), no. 2, 209–223.
- [174] C. M. Ringel, The Ziegler spectrum of a tame hereditary algebra, *Colloq. Math.* **76** (1998), no. 1, 105–115.
- [175] C. M. Ringel and H. Tachikawa, QF–3 rings, *J. Reine Angew. Math.* **272** (1974), 49–72.
- [176] N. Roby, Lois polynomes et lois formelles en théorie des modules, *Ann. Sci. Éc. Norm. Supér. (Sér. 3)* **80** (1963), 213–348.
- [177] J.-E. Roos, Sur la décomposition bornée des objets injectifs dans les catégories de Grothendieck, *C. R. Acad. Sci. Paris Sér. A-B* **266** (1968), A449–A452.
- [178] J. E. Roos, Locally Noetherian categories and generalized strictly linearly compact rings. Applications, in *Category theory, homology theory and their applications, II (Battelle Institute Conf., Seattle, Wash., 1968, Vol. Two)*, 197–277, Springer, Berlin, 1969.

- [179] L. Salce, Cotorison theories for abelian groups, in *Symposia Mathematica*, vol. XXIII (*Conf. abelian groups and their relationship to the theory of modules, INDAM, Rome, 1977*), 11–32, Academic Press, London, 1979.
- [180] S. V. Sam and A. Snowden, Gröbner methods for representations of combinatorial categories, *J. Am. Math. Soc.* **30** (2017), no. 1, 159–203.
- [181] M. Schlichting, Negative  $K$ -theory of derived categories, *Math. Z.* **253** (2006), no. 1, 97–134.
- [182] A. H. Schofield, *Representation of rings over skew fields*, London Mathematical Society Lecture Note Series, 92, Cambridge University Press, Cambridge, 1985.
- [183] H. Schubert, *Categories* [translated from the German by Eva Gray], Springer, New York, 1972.
- [184] I. Schur, Über eine Klasse von Matrizen, die sich einer gegebenen Matrix zuordnen lassen. Dissertation, Berlin, 1901. In I. Schur, *Gesammelte Abhandlungen I*, 1–70, Springer, Berlin, 1973.
- [185] I. Schur, Über die rationalen Darstellungen der allgemeinen linearen Gruppe, *Sitzungsber. Preuß. Akad. Wiss., Phys.-Math. Kl.* (1927), 58–75. In I. Schur, *Gesammelte Abhandlungen III*, 68–85, Springer, Berlin, 1973.
- [186] S. Schwede, Algebraic versus topological triangulated categories, in *Triangulated categories*, 389–407, London Mathematical Society Lecture Note Series, 375, Cambridge University Press, Cambridge, 2010.
- [187] L. L. Scott, Simulating algebraic geometry with algebra. I. The algebraic theory of derived categories, in *The Arcata Conf. on representations of finite groups (Arcata, Calif., 1986)*, 271–281, Proceedings of Symposia in Pure Mathematics, 47, Part 2, American Mathematical Society, Providence, RI, 1987.
- [188] J.-P. Serre, Faisceaux algébriques cohérents, *Ann. Math. (Ser. 2)* **61** (1955), 197–278.
- [189] J.-P. Serre, Cohomologie et géométrie algébrique, in *Proc. Int. Congress of mathematicians, 1954, Amsterdam*, vol. III, 515–520, Erven P. Noordhoff, Groningen, 1956.
- [190] J.-P. Serre, Sur les modules projectifs, in *Séminaire P. Dubreil, M.-L. Dubreil-Jacotin et C. Pisot, 14ième année: 1960/61. Algèbre et théorie des nombres. Fasc. 1*, 1–16, Faculté des Sciences de Paris, Secrétariat mathématique, Paris, 1963.
- [191] D. Simson, Pure semisimple categories and rings of finite representation type, *J. Algebra* **48** (1977), no. 2, 290–296.
- [192] D. Simson, On pure semi-simple Grothendieck categories. I, *Fund. Math.* **100** (1978), no. 3, 211–222.
- [193] D. Simson, On right pure semisimple hereditary rings and an Artin problem, *J. Pure Appl. Algebra* **104** (1995), no. 3, 313–332.
- [194] N. Spaltenstein, Resolutions of unbounded complexes, *Compos. Math.* **65** (1988), no. 2, 121–154.
- [195] R. P. Stanley, *Enumerative combinatorics*, vol. 2, Cambridge Studies in Advanced Mathematics, 62, Cambridge University Press, Cambridge, 1999.
- [196] B. T. Stenström, Pure submodules, *Ark. Mat.* **7** (1967), 159–171.
- [197] B. Stenström, *Rings of quotients*, Springer, New York, 1975.
- [198] B. Totaro, Projective resolutions of representations of  $GL(n)$ , *J. Reine Angew. Math.* 482 (1997) 1–13.

- [199] J.-L. Verdier, *Des catégories dérivées des catégories abéliennes*, Astérisque, 239, Société Mathématique de France, 1996.
- [200] R. B. Warfield, Jr., Purity and algebraic compactness for modules, Pacific J. Math. **28** (1969), 699–719.
- [201] N. Yoneda, On the homology theory of modules, J. Fac. Sci. Univ. Tokyo Sect. I **7** (1954), 193–227.
- [202] A. Zaks, Injective dimension of semi-primary rings, J. Algebra **13** (1969), 73–86.
- [203] M. Ziegler, Model theory of modules, Ann. Pure Appl. Logic **26** (1984), no. 2, 149–213.
- [204] W. Zimmermann, Rein injektive direkte Summen von Moduln, Commun. Algebra **5** (1977), no. 10, 1083–1117.
- [205] B. Zimmermann-Huisgen, Rings whose right modules are direct sums of indecomposable modules, Proc. Am. Math. Soc. **77** (1979), no. 2, 191–197.

