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Nota di contenuto	Contents; Preface; Introduction; 0.1 Categorical settings for homological algebra; 0.2 Semiexact, homological and generalised exact categories; 0.3 Subquotients and homology; 0.4 Satellites; 0.5 Exact centres, expansions, fractions and relations; 0.6 Applications; 0.7 Homological theories and biuniversal models; 0.8 Modularity and additivity; 0.9 A list of examples; 0.10 Terminology and notation; 0.11 Acknowledgements; 1 Semiexact categories; 1.1 Some basic notions; 1.1.1 Lattices; 1.1.2 Distributive and modular lattices; 1.1.3 Galois connections; 1.1.4 Contravariant Galois connections 1.1.5 Isomorphisms, monomorphisms and epimorphisms1.1.6 Pointed categories; 1.1.7 Kernels and cokernels; 1.2 Lattices and Galois connections; 1.2.1 Definition; 1.2.2 Monos and epis; 1.2.3 Kernels and cokernels; 1.2.4 The normal factorisation; 1.2.5 Exact connections; 1.2.6 Normal monos and epis; 1.2.7 The semi-additive structure; 1.2.8 Modular connections; 1.3 The main definitions; 1.3.1 Ideals of null morphisms; 1.3.2 Closed ideals; 1.3.3 Semiexact categories; 1.3.4 Remarks; 1.3.5 Kernel duality and short exact sequences; 1.3.6 Homological and generalised exact categories; 1.3.7 Subcategories 1.4 Structural examples 1.4.1 Lattices and connections; 1.4.2 A basic

homological category; 1.4.3 A p-exact category; 1.4.4 Graded objects; 1.4.5 The canonical enriched structure; 1.4.6 Proposition; 1.5 Semi-exact categories and normal subobjects; 1.5.1 Semi-exact categories and local smallness; 1.5.2 Exact sequences; 1.5.3 Lemma (Annihilation properties); 1.5.4 Theorem (Two criteria for semi-exact categories); 1.5.5 Normal factorisations and exact morphisms; 1.5.6 Direct and inverse images; 1.5.7 Lemma (Meets and detection properties); 1.5.8 Theorem and Definition (The transfer functor) 1.5.9 Remarks 1.6 Other examples of semi-exact and homological categories; 1.6.1 Groups, rings and groupoids; 1.6.2 Abelian monoids, semimodules, preordered abelian groups; 1.6.3 Topological vector spaces; 1.6.4 Pointed sets and spaces; 1.6.5 Categories of partial mappings; 1.6.6 General modules; 1.6.7 Categories of pairs; 1.6.8 Groups as pairs; 1.6.9 Two examples; 1.7 Exact functors; 1.7.0 Basic definitions; 1.7.1 Exact functors and normal subobjects; 1.7.2 Conservative exact functors; 1.7.3 Proposition and Definition (Semiexact subcategories); 1.7.4 Examples 2.2.3 Definition and Proposition (Exact ideals)

Sommario/riassunto

We propose here a study of 'semiexact' and 'homological' categories as a basis for a generalised homological algebra. Our aim is to extend the homological notions to deeply non-abelian situations, where satellites and spectral sequences can still be studied. This is a sequel of a book on 'Homological Algebra, The interplay of homology with distributive lattices and orthodox semigroups', published by the same Editor, but can be read independently of the latter. The previous book develops homological algebra in p-exact categories, i.e. exact categories in the sense of Puppe and Mitchell - a modera
