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exact categories; 1.5.1 Some terminology; 1.5.2 Pointed categories; 1.5.3 Kernels and cokernels; 1.5.4 Exact categories and exact functors; 1.5.5 Smallness; 1.5.6 Examples; 1.5.7 Galois connections; 1.5.8 Modular lattices and modular connections; 1.6 A synopsis of the projective approach; 1.6.1 Direct and inverse images of abelian groups; 1.6.2 The transfer functor; 1.6.3 Distributivity and coherence 1.6.4 The category of sets and partial bijections 1.6.5 Generalisations; 1.7 Free modular lattices; 1.7.1 The Birkhoff Theorem (finite case); 1.7.2 The Birkhoff Theorem (general case); 2 Puppe-exact categories; 2.1 Abelian and p-exact categories; 2.1.1 Additive categories and biproducts; 2.1.2 Lemma (Biproducts); 2.1.3 Theorem and Definition (Semiadditive categories); 2.1.4 Additive categories; 2.1.5 Theorem and definition (Abelian categories); 2.1.6 Biproducts in abelian categories; 2.1.7 Split products in p-exact categories; 2.1.8 Examples of split products 2.1.9 Split products and abelian-valued functors 2.2 Subobjects, quotients and the transfer functor; 2.2.1 Kernel duality; 2.2.2 Exact sequences; 2.2.3 Theorem (Modular lattices); 2.2.4 Lemma (Pullbacks and pushouts in p-exact categories); 2.2.5 Direct and inverse images; 2.2.6 Theorem and Definition (The transfer functor); 2.2.7 Subquotients; 2.2.8 Further remarks on modular lattices; 2.2.9 Lemma (Noether isomorphisms); 2.3 Projective p-exact categories and projective spaces; 2.3.1 The associated projective category; 2.3.2 Proposition (The projective congruence of vector spaces) 2.3.3 Projective spaces and projective maps

Sommario/riassunto

In this book we want to explore aspects of coherence in homological algebra, that already appear in the classical situation of abelian groups or abelian categories. Lattices of subobjects are shown to play an important role in the study of homological systems, from simple chain complexes to all the structures that give rise to spectral sequences. A parallel role is played by semigroups of endorelations. These links rest on the fact that many such systems, but not all of them, live in distributive sublattices of the modular lattices of subobjects of the system. The property of distributivity al
