CONTENTS

s ction	III VI 1
I. The Derived Category	1 9
Introduction Triangulated categories K(A) is triangulated Localization of categories Qis and the derived category Derived functors Examples. Ext and R Hom* Way-out functors and isomorphisms	19 20 25 28 35 49 62 68
II. Application to Preschemes Categories of sheaves The derived functors of f _* and Γ The derived functor of Hom' The derived functors of ⊗ and f* Relations among the derived functors Compatibilities among the relations of \$5 Injective sheaves on a locally noetherian prescheme	85 87 90 93 100 115
III. Duality for Projective Morphisms	137
Differentials f* for a smooth morphism f' Recall of the explicit calculations The trace map for projective space The duality theorem for projective space Duality for a finite morphism The fundamental local isomorphism f' for embeddable morphisms The residue symbol Trace for projective morphisms Duality for projective morphisms	137 145 148 154 160 164 176 184 195 200 210
	I. The Derived Category Introduction Triangulated categories K(A) is triangulated Localization of categories Qis and the derived category Derived functors Examples. Ext and R Hom' Way-out functors and isomorphisms II. Application to Preschemes Categories of sheaves The derived functors of f** and f* The derived functors of wand f* Relations among the derived functors Compatibilities among the relations of \$5 Injective sheaves on a locally noetherian prescheme III. Duality for Projective Morphisms Differentials f** for a smooth morphism f' Recall of the explicit calculations The trace map for projective space The duality theorem for projective space Duality for a finite morphism The fundamental local isomorphism f' for embeddable morphisms The residue symbol

		page
Chapter	IV. Local Cohomology	2 1 5
	Local cohomology groups, sheaves, and complexes Depth and the Cousin complex Generalization to complexes	2 1 5 229 240
Chapter	V. Dualizing Complexes and Local Duality	252
80. 81. 82.	Dualizing complexes Uniqueness of the dualizing complex	252 254 257 266
8 6.	Local cohomology on a prescheme Dualizing functors on a local noetherian ring Local duality	276
§ 8. § 9.	Application to dualizing complexes Pointwise dualizing complexes and f* Gorenstein preschemes Existence of dualizing complexes	282 286 293 299
Chapter	VI. Residual Complexes	302
S 2. S 3. S 4.	Residual complexes Functorial properties f for residual complexes	302 304 311 318 335 349
Chapter	VII. The Duality Theorem	357
§1. §2. §3. §4.	Curves over an Artin ring The residue theorem The duality theorem for proper morphisms Smooth morphisms	357 369 374 388
Index of	f Definitions	394
Index of	f Notations	396
Bibliog	caphy	401
Appendix	. Cohomologie à Support Propre, et Construction du	
Foncteur	f!, par P. Deligne	404
Errata		422