

CONVENTIONS

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1. Comments

The philosophy behind the conventions used in writing these documents is to choose those conventions that work.

2. Set theory

We use Zermelo-Fraenkel set theory with the axiom of choice. See [Kun83]. We do not use universes (different from SGA4). We do not stress set-theoretic issues, but we make sure everything is correct (of course) and so we do not ignore them either.

3. Categories

A category \mathcal{C} consists of a set of objects and, for each pair of objects, a set of morphisms between them. In other words, it is what is called a “small” category in other texts. We will use “big” categories (categories whose objects form a proper class) as well, but only those that are listed in Categories, Remark 2.2.

4. Algebra

In these notes a ring is a commutative ring with a 1. Hence the category of rings has an initial object \mathbf{Z} and a final object $\{0\}$ (this is the unique ring where $1 = 0$). Modules are assumed unitary. See [Eis95].

5. Notation

The natural integers are elements of $\mathbf{N} = \{1, 2, 3, \dots\}$. The integers are elements of $\mathbf{Z} = \{\dots, -2, -1, 0, 1, 2, \dots\}$. The field of rational numbers is denoted \mathbf{Q} . The field of real numbers is denoted \mathbf{R} . The field of complex numbers is denoted \mathbf{C} .

6. Other chapters

Preliminaries

(1) Introduction

- (2) Conventions
- (3) Set Theory
- (4) Categories
- (5) Topology
- (6) Sheaves on Spaces
- (7) Sites and Sheaves
- (8) Stacks
- (9) Fields
- (10) Commutative Algebra
- (11) Brauer Groups
- (12) Homological Algebra
- (13) Derived Categories
- (14) Simplicial Methods
- (15) More on Algebra
- (16) Smoothing Ring Maps
- (17) Sheaves of Modules
- (18) Modules on Sites
- (19) Injectives
- (20) Cohomology of Sheaves
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- (22) Differential Graded Algebra
- (23) Divided Power Algebra
- (24) Hypercoverings
- Schemes
 - (25) Schemes
 - (26) Constructions of Schemes
 - (27) Properties of Schemes
 - (28) Morphisms of Schemes
 - (29) Cohomology of Schemes
 - (30) Divisors
 - (31) Limits of Schemes
 - (32) Varieties
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 - (34) Descent
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 - (36) More on Morphisms
 - (37) More on Flatness
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 - (39) More on Groupoid Schemes
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- Topics in Scheme Theory
 - (41) Chow Homology
 - (42) Adequate Modules
 - (43) Dualizing Complexes
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 - (46) Pro-étale Cohomology
- Algebraic Spaces
 - (47) Algebraic Spaces
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 - (50) Decent Algebraic Spaces
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 - (55) Topologies on Algebraic Spaces
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 - (59) Pushouts of Algebraic Spaces
 - (60) Groupoids in Algebraic Spaces
 - (61) More on Groupoids in Spaces
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- Topics in Geometry
 - (63) Quotients of Groupoids
 - (64) Simplicial Spaces
 - (65) Formal Algebraic Spaces
 - (66) Restricted Power Series
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- Deformation Theory
 - (68) Formal Deformation Theory
 - (69) Deformation Theory
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- Algebraic Stacks
 - (71) Algebraic Stacks
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References

- [Eis95] David Eisenbud, *Commutative algebra*, Graduate Texts in Mathematics, vol. 150, Springer-Verlag, 1995.
- [Kun83] Kenneth Kunen, *Set theory*, Elsevier Science, 1983.