

# Elementary characterization of categories of commutative algebras

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We discuss elementary axioms on a category  $\mathcal{C}$  ensuring that, in the presence of non elementary cocompleteness and generating axioms,  $\mathcal{C}$  is equivalent to the category of commutative  $R$ -algebras over a commutative ring  $R$ , unique up to an isomorphism. The axioms we found are simple and transparent, and in a sense are the natural development of the line of thought initiated with the notion of an abelian category with its relations with categories of modules. Our work provides some answers to questions posed by Lawvere and Schanuel about extensive categories, and should be compared with the work of Diers and others on axiomatic Algebraic Geometry.

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\*Joint work with G. Janelidze.