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Introduction to the Theory of Analytic Spaces

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PREFACE

The aim of these notes is to give proofs of the basic theorems in the local theory of analytic spaces and a few of their applications to results on the global structure of complex analytic spaces. The classical theory of holomorphic and analytic functions in $\mathbb{C}^n$ and $\mathbb{R}^n$ respectively is assumed; specific references are given for the results that are assumed. The elements of commutative algebra, especially properties of Noetherian and factorial rings, and of elements integral over a ring, are also assumed.

The term "analytic space" does not occur in the text. In conformity with German practice, we have called analytic spaces over the complex numbers simply "complex spaces". Further, analytic spaces over the real numbers are not introduced in all generality. We have considered only analytic subsets of a real analytic manifold, since a satisfactory treatment of the general case would involve results of Cartan and Bruhat - Whitney which we have stated but not proved. Nevertheless it was felt that the present title was the most appropriate.