Preface

The theory of algebraic spaces and stacks has its origins in the study of moduli spaces in algebraic geometry. It is closely related to the problem of constructing quotients of varieties by equivalence relations or group actions, and the basic definitions are natural outgrowths of this point of view. The foundations of the theory were introduced by Deligne and Mumford in their fundamental paper on the moduli space of curves [**23**] and by Artin building on his work on algebraic approximations [**9**]. Though it has taken some time, algebraic spaces and stacks are now a standard part of the modern algebraic geometers toolkit and are used throughout the subject.

This book is an introduction to algebraic spaces and stacks intended for a reader familiar with basic algebraic geometry (for example Hartshorne's book [**41**]). We do not strive for an exhaustive treatment. Rather we aim to give the reader enough of the theory to pursue research in areas that use algebraic spaces and stacks, and to proceed on to more advanced topics through other sources. Numerous exercises are included at the end of each chapter, ranging from routine verifications to more challenging further developments of the theory.

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