**David Eisenbud et al.** (Eds.)

**Computations in Algebraic Geometry with Macaulay 2**

This book presents algorithmic tools for algebraic geometry and experimental applications of them. It also introduces a software system in which the tools have been implemented and with which the experiments can be carried out. Macaulay 2 is a computer algebra system devoted to supporting research in algebraic geometry, commutative algebra, and their applications. The reader of this book will encounter Macaulay 2 in the context of concrete applications and practical computations in algebraic geometry. The expositions of the algorithmic tools presented here are designed to serve as a useful guide for those wishing to bring such tools to bear on their own problems. These expositions will be valuable to both the users of other programs similar to Macaulay 2 (for example, Singular and CoCoA) and those who are not interested in explicit machine computations at all. The first part of the book is primarily concerned with introducing Macaulay2, whereas the second part emphasizes the mathematics.

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