

Preface

Error-correcting codes are used to achieve a reliable transmission of information through noisy channels. Due to their importance for many applications they became a meeting point between mathematics, computer science and engineering. All error-correcting codes are constructed using mathematical tools but, perhaps, the most deep and fascinating links between (classical) mathematics and codes can be found in Algebraic Geometry Codes.

The theory of Algebraic Geometry codes started over thirty years ago with the works of V.D. Goppa. Nowadays this theory is both a ripe subject and an exciting research field. At the same time, it has impelled research in different mathematical areas, as for example curves over finite fields.

In this book we try to provide the fundamentals, the ‘state of the art’ and the ‘state of research’, of this field. It consists of twelve chapters written by some of the most renowned specialists worldwide, each of them devoted to one of the main leading topics in this subject. These chapters are mostly self-contained and have been designed to be read independently.

We hope that this book will be useful for students and researchers in algebraic geometry and coding theory, as well as for computer scientists and engineers interested in information transmission.

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