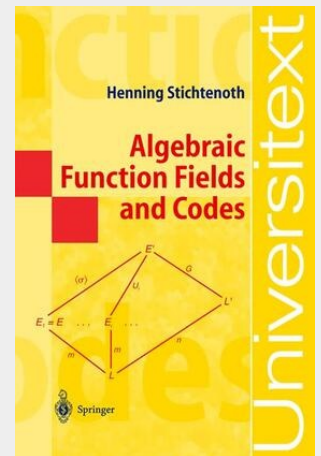


Algebraic Function Fields and Codes

This book has two objectives. The first is to fill a void in the existing mathematical literature by providing a modern, self-contained and in-depth exposition of the theory of algebraic function fields. Topics include the Riemann-Roch theorem, algebraic extensions of function fields, ramifications theory and differentials. Particular emphasis is placed on function fields over a finite constant field, leading into zeta functions and the Hasse-Weil theorem. Numerous examples illustrate the general theory. Error-correcting codes are in widespread use for the reliable transmission of information. Perhaps the most fascinating of all the ties that link the theory of these codes to mathematics is the construction by V.D. Goppa, of powerful codes using techniques borrowed from algebraic geometry. Algebraic function fields provide the most elementary approach to Goppa's ideas, and the second objective of this book is to provide an introduction to Goppa's algebraic-geometric codes along these lines. The codes, their parameters and links with traditional codes such as classical Goppa, Reed-Solomon and BCH codes are treated at an early stage of the book. Subsequent chapters include a decoding algorithm for these codes as well as a discussion of their subfield subcodes and trace codes. Stichtenoth's book will be very useful to students and researchers in algebraic geometry and coding theory and to computer scientists and engineers interested in information transmission.



42,75 €

39,95 € (zzgl. MwSt.)

Recommended Retail Price

Nicht mehr lieferbar

Artikelnummer: 9783540564898

Medium: Buch

ISBN: 978-3-540-56489-8

Verlag: Springer

Erscheinungstermin: 01.06.1993

Sprache(n): Englisch

Auflage: Erscheinungsjahr 1993

Serie: Universitext

Produktform: Kartoniert

Seiten: 260

Format (B x H): 155 x 235 mm

