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Titolo	Bent functions : results and applications to cryptography // by Natalia Tokareva, Sobolev Institute of Mathematics, Novosibirsk State University, Novosibirsk, Russia
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Livello bibliografico	Monografia
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Nota di contenuto	Front Cover; Bent Functions: Results and Applications to Cryptography; Copyright; Contents; Foreword; Preface; Notation; Chapter 1: Boolean Functions; Introduction; 1.1 Definitions; 1.2 Algebraic Normal Form; 1.3 Boolean Cube and Hamming Distance; 1.4 Extended Affinely Equivalent Functions; 1.5 Walsh-Hadamard Transform; 1.6 Finite Field and Boolean Functions; 1.7 Trace Function; 1.8 Polynomial Representation of a Boolean Function; 1.9 Trace Representation of a Boolean Function; 1.10 Monomial Boolean Functions; Chapter 2: Bent Functions: An Introduction; Introduction 2.1 Definition of a Nonlinearity 2.2 Nonlinearity of a Random Boolean Function; 2.3 Definition of a Bent Function; 2.4 If n Is Odd?; 2.5 Open Problems; 2.6 Surveys; Chapter 3: History of Bent Functions; Introduction; 3.1 Oscar Rothaus; 3.2 V.A. Eliseev and O.P. Stepchenkov; 3.3 From the 1970s to the Present; Chapter 4: Applications of Bent Functions; Introduction; 4.1 Cryptography: Linear Cryptanalysis and Boolean Functions; 4.2 Cryptography: One Historical Example; 4.3 Cryptography: Bent Functions in CAST; 4.4 Cryptography: Bent Functions in Grain; 4.5 Cryptography: Bent Functions in HAVAL

4.6 Hadamard Matrices and Graphs  
4.7 Links to Coding Theory; 4.8 Bent Sequences; 4.9 Mobile Networks, CDMA; 4.10 Remarks; Chapter 5: Properties of Bent Functions; Introduction; 5.1 Degree of a Bent Function; 5.2 Affine Transformations of Bent Functions; 5.3 Rank of a Bent Function; 5.4 Dual Bent Functions; 5.5 Other Properties; Chapter 6: Equivalent Representations of Bent Functions; Introduction; 6.1 Hadamard Matrices; 6.2 Difference Sets; 6.3 Designs; 6.4 Linear Spreads; 6.5 Sets of Subspaces; 6.6 Strongly Regular Graphs; 6.7 Bent Rectangles  
Chapter 7: Bent Functions with a Small Number of Variables  
Introduction; 7.1 Two and Four Variables; 7.2 Six Variables; 7.3 Eight Variables; 7.4 Ten and More Variables; 7.5 Algorithms for Generation of Bent Functions; 7.6 Concluding Remarks; Chapter 8: Combinatorial Constructions of Bent Functions; Introduction; 8.1 Rothaus's Iterative Construction; 8.2 Maiorana-McFarland Class; 8.3 Partial Spreads: PS+, PS-; 8.4 Dillon's Bent Functions: PSap; 8.5 Dobbertin's Construction; 8.6 More Iterative Constructions; 8.7 Minterm Iterative Constructions; 8.8 Bent Iterative Functions: BI  
8.9 Other Constructions  
Chapter 9: Algebraic Constructions of Bent Functions; Introduction; 9.1 An Algebraic Approach; 9.2 Bent Exponents: General Properties; 9.3 Gold Bent Functions; 9.4 Dillon Exponent; 9.5 Kasami Bent Functions; 9.6 Canteaut-Leander Bent Functions (MF-1); 9.7 Canteaut-Charpin-Kuyreghyan Bent Functions (MF-2); 9.8 Niho Exponents; 9.9 General Algebraic Approach; 9.10 Other Constructions; Chapter 10: Bent Functions and Other Cryptographic Properties; Introduction; 10.1 Cryptographic Criteria; 10.2 High Degree and Balancedness; 10.3 Correlation Immunity and Resiliency  
10.4 Algebraic Immunity

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### Sommario/riassunto

Bent Functions: Results and Applications to Cryptography offers a unique survey of the objects of discrete mathematics known as Boolean bent functions. As these maximal, nonlinear Boolean functions and their generalizations have many theoretical and practical applications in combinatorics, coding theory, and cryptography, the text provides a detailed survey of their main results, presenting a systematic overview of their generalizations and applications, and considering open problems in classification and systematization of bent functions. The text is appropriate for novices and advanced

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2. Record Nr.	UNINA9910788886703321
Autore	DeVore Ronald A.
Titolo	Maximal functions measuring smoothness / / Ronald A. DeVore and Robert C. Sharpley
Pubbl/distr/stampa	Providence, R.I., USA : , : American Mathematical Society, , [1984] ©1984
ISBN	1-4704-0703-5
Descrizione fisica	1 online resource (125 p.)
Collana	Memoirs of the American Mathematical Society, , 0065-9266 ; ; number 293
Disciplina	510 s 515.8/4
Soggetti	Functions of several real variables Smoothness of functions Maximal functions Sobolev spaces
Lingua di pubblicazione	Inglese
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Nota di contenuto	""Table of Contents""; ""Glossary""; ""Section 1. Introduction""; ""Section 2. Maximal Functions""; ""Section 3. Inequalities For Polynomials""; ""Section 4. Additional Estimates""; ""Section 5. The Calderon Maximal Operator And Peano Derivatives""; ""Section 6. Smoothness Spaces""; ""Section 7. Comparisons With Besov Spaces""; ""Section 8. Interpolation""; ""Section 9. Embeddings""; ""Section 10. Extension Theorem""; ""Section 11. Extensions For Domains With Minimally Smooth Boundary""; ""Section 12. The Case $0 < p < 1$ ""; ""References""