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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1. Introduction: The nature of the problems -- The combinatorial structures in question -- Group rings, characters, Fourier analysis -- Number theoretic tools -- Algebraic-combinatorial tools. 2. The field descent: The fixing theorem -- Prescribed absolute value -- Bounding the absoute value -- The modulus equation and the class group. 3. Exponent bounds: Self-conjugacy exponent bounds -- Field descent exponent bounds. 4. Two-weight irreducible cyclic bounds: A necessary and sufficient condition -- All two-weight irreducible cyclic codes?- Partial proof of Conjecture 4.2.4 -- Two-intersection sets and sub-difference sets.
Sommario/riassunto	This monograph contributes to the existence theory of difference sets, cyclic irreducible codes and similar objects. The new method of field descent for cyclotomic integers of presribed absolute value is developed. Applications include the first substantial progress towards the Circulant Hadamard Matrix Conjecture and Ryser`s conjecture since decades. It is shown that there is no Barker sequence of length l with 13<1<4x10^(12). Finally, a conjecturally complete classification of all irreducible cyclic two-weight codes is obtained.