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| Autore | Kowalski Emmanuel <1969-> |
| Titolo | The large sieve and its applications : arithmetic geometry, random walks and discrete groups / / E. Kowalski [[electronic resource]] |
| Pubbl/distr/stampa | Cambridge : , : Cambridge University Press, , 2008 |
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| Descrizione fisica | 1 online resource (xxi, 293 pages) : digital, PDF file(s) |
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| Disciplina | 512.73 |
| Soggetti | Sieves (Mathematics)<br>Arithmetical algebraic geometry<br>Random walks (Mathematics)<br>Discrete groups |
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| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | ; 1. Introduction -- ; 2. The principle of the large sieve -- ; 3. Group and conjugacy sieves -- ; 4. Elementary and classical examples -- ; 5. Degrees of representations of finite groups -- ; 6. Probabilistic sieves -- ; 7. Sieving in discrete groups -- ; 8. Sieving for Frobenius over finite fields -- ; App. A. Small sieves -- ; App. B. Local density computations over finite fields -- ; App. C. Representation theory -- ; App. D. Property (T) and Property ([tau]) -- ; App. E. Linear algebraic groups -- ; App. F. Probability theory and random walks -- ; App. G. Sums of multiplicative functions -- ; App. H. Topology. |
| Sommario/riassunto | Among the modern methods used to study prime numbers, the 'sieve' has been one of the most efficient. Originally conceived by Linnik in |

1941, the 'large sieve' has developed extensively since the 1960s, with a recent realisation that the underlying principles were capable of applications going well beyond prime number theory. This book develops a general form of sieve inequality, and describes its varied applications, including the study of families of zeta functions of algebraic curves over finite fields; arithmetic properties of characteristic polynomials of random unimodular matrices; homological properties of random 3-manifolds; and the average number of primes dividing the denominators of rational points on elliptic curves. Also covered in detail are the tools of harmonic analysis used to implement the forms of the large sieve inequality, including the Riemann Hypothesis over finite fields, and Property (T) or Property (tau) for discrete groups.