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	Soggetti	Combinatorial analysis Convex geometry Discrete geometry Dynamics Ergodic theory Functional analysis Biomathematics Combinatorics Convex and Discrete Geometry Dynamical Systems and Ergodic Theory Functional Analysis Genetics and Population Dynamics
	Lingua di pubblicazione	Inglese
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	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references at the end of each chapters.
	Nota di contenuto	Section 1: Extremal and Probabilistic Combinatorics -- Problems Related to Graph Indices in Trees -- The edit distance in graphs: methods, results and generalizations -- Repetitions in graphs and sequences -- On Some Extremal Problems for Cycles in Graphs -- A survey of Turan problems for expansions -- Survey on matching, packing and Hamilton cycle problems on hypergraphs -- Rainbow Hamilton cycles in random graphs and hypergraphs -- Further applications of the Container Method -- Independent transversals and hypergraph matchings - an elementary approach -- Giant components in random graphs -- Infinite random graphs and properties of metrics

-- Nordhaus-Gaddum Problems for Colin de Verdière Type Parameters, Variants of Tree-width, and Related Parameters -- Algebraic aspects of the normalized Laplacian -- Poset-free Families of Subsets.
- Mathematics of causal sets -- Section 2: Additive and Analytic Combinatorics -- Lectures on Approximate groups and Hilbert's 5th Problem -- Character sums and arithmetic combinatorics -- On sum-product problem -- Ajtai-Szemerédi Theorems over quasirandom groups -- Section 3: Enumerative and Geometric Combinatorics -- Moments of orthogonal polynomials and combinatorics -- The combinatorics of knot invariants arising from the study of Macdonald polynomials -- Some algorithmic applications of partition functions in combinatorics -- Partition Analysis, Modular Functions, and Computer Algebra -- A survey of consecutive patterns in permutations -- Unimodality Problems in Ehrhart Theory -- Face enumeration on simplicial complexes -- Simplicial and Cellular Trees -- Parametric Polyhedra with at least k Lattice Points: Their Semigroup Structure and the k-Frobenius Problem.- Dynamical Algebraic Combinatorics and the Homomesy Phenomenon.

Sommario/riassunto	This volume presents some of the research topics discussed at the 2014-2015 Annual Thematic Program Discrete Structures: Analysis and Applications at the Institute for Mathematics and its Applications during Fall 2014, when combinatorics was the focus. Leading experts have written surveys of research problems, making state of the art results more conveniently and widely available. The three-part structure of the volume reflects the three workshops held during Fall 2014. In the first part, topics on extremal and probabilistic combinatorics are presented; part two focuses on additive and analytic combinatorics; and part three presents topics in geometric and enumerative combinatorics. This book will be of use to those who research combinatorics directly or apply combinatorial methods to other fields.