

1. Record Nr.	UNINA9910300249503321
Titolo	Combinatorial methods in topology and algebra // edited by Bruno Benedetti, Emanuele Delucchi, Luca Moci
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2015
ISBN	3-319-20155-7
Edizione	[1st ed. 2015.]
Descrizione fisica	1 online resource (222 p.)
Collana	Springer INdAM Series, , 2281-518X ; ; 12
Disciplina	514.22
Soggetti	Algebra Discrete mathematics Topology Convex geometry Discrete geometry Discrete Mathematics Convex and Discrete Geometry
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	1 Introduction -- 2 Part I -- 3 Extremal graph theory and face numbers of flag triangulations of manifolds -- 4 Combinatorial stratifications and minimality of 2-arrangements -- 5 Rota's conjecture, the missing axiom, and prime cycles in toric varieties -- 6 Random triangular groups -- 7 Generalized involution models of projective reflection groups -- 8 Universal Gröbner bases for maximal minors of matrices of linear forms -- 9 Milnor fibrations of arrangements -- 10 Decompositions of Betti diagrams of powers of monomial ideals -- 11 Matroids over a ring -- 12 A Minimal Irreducible Triangulation of $S^3$ -- 13 Tropical Oriented Matroids -- 14 A combinatorial classification of Buchsbaum simplicial posets -- 15 Differences Between Nonnegative Polynomials and Sums of Squares -- 16 Interpolation, box splines, and lattice points in polytopes -- 17 Root polytopes of crystallographic root systems -- 18 Product formulas for volumes of flow polytopes -- 19 On the Topology of the Cambrian Semilattices -- 20 cd-index for CW-posets -- 21 Bipartite Rigidity -- 22 Balanced manifolds and

pseudomanifolds -- 23 Some combinatorial constructions and relations with Artin groups -- 24 Deterministic Abelian Sandpile and square-triangle tilings -- 25 A special feature of quadratic monomial ideals -- 26 Resonant bands, local systems and Milnor fibers of real line arrangements -- 27 Full research papers -- 28 On Highly Regular Embeddings -- 29 Positive sum systems -- 30 The  $S_{n+1}$  action on spherical models and supermaximal models of type  $A_{n-1}$  -- 31 h-vectors of matroid complexes.

---

## Sommario/riassunto

Combinatorics plays a prominent role in contemporary mathematics, due to the vibrant development it has experienced in the last two decades and its many interactions with other subjects. This book arises from the INdAM conference "CoMeTA 2013 - Combinatorial Methods in Topology and Algebra," which was held in Cortona in September 2013. The event brought together emerging and leading researchers at the crossroads of Combinatorics, Topology and Algebra, with a particular focus on new trends in subjects such as: hyperplane arrangements; discrete geometry and combinatorial topology; polytope theory and triangulations of manifolds; combinatorial algebraic geometry and commutative algebra; algebraic combinatorics; and combinatorial representation theory. The book is divided into two parts. The first expands on the topics discussed at the conference by providing additional background and explanations, while the second presents original contributions on new trends in the topics addressed by the conference.

---