

1. Record Nr.	UNINA9910299993003321
Titolo	Rigidity and symmetry // edited by Robert Connelly, Asia Ivi Weiss, Walter Whiteley
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2014
ISBN	1-4939-0781-6
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (378 p.)
Collana	Fields Institute Communications, , 1069-5265 ; ; 70
Disciplina	512.25
Soggetti	Graph theory Combinatorics Polytopes Convex geometry Discrete geometry Topology Graph Theory 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	Volumes of Polytopes in Spaces of Constant Curvature (N. Abrosimov, A. Mednykh) -- Cubic Cayley Graphs and Snarks (H. Ademir, K. Kutnar, D. Maruši) -- Local, Dimensional and Universal Rigidities: A unified Gram Matrix Approach (A. Alfakih) -- Geometric Constructions for Symmetric 6-Configurations (L.W. Berman) -- On External Symmetry Groups of Regular Maps (M.D.E. Conder, Y.S. Kwon, J. Širá) -- Variance Groups and the Structure of Mixed Polytopes (G. Cunningham) -- Mobility in Symmetry-Regular Bar-and-Joint Frameworks (P.W. Fowler, S.D. Guest, B. Schulze) -- Generic Global Rigidity in Complex and Pseudo-Euclidean Spaces (S.J. Gortler, D.P. Thurston) -- Chiral Polytopes and Suzuki simple Group (I. Hubard, D. Leemans) -- Globally Linked Pairs of Vertices in Rigid Frameworks (B. Jackson, T. Jordán, Z. Szabadka) -- Beauville Surfaces and Groups: A survey (G.A. Jones) -- Generic Rigidity with Forced symmetry and Sparse Colored Graphs (G. Malestein, L. Theran) -- Rigidity of Regular Polytopes (P. McMullen) -- Hereditary Polytopes (M. Mixer, E. Schulte, A.I. Weiss) -- One Brick at a

Time: A Survey of Inductive Constructions in Rigidity Theory (A. Nixon, E. Ross) -- Polygonal Complexes and Graphs for Crystallographic Groups (D. Pellicer, E. Schulte) -- Two Notes on Maps and Surface Symmetry (T.W. Tucker) -- Buildings and s-Transitive Graphs (R.M. Weiss).

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Sommario/riassunto

This book contains recent contributions to the fields of rigidity and symmetry with two primary focuses: to present the mathematically rigorous treatment of rigidity of structures, and to explore the interaction of geometry, algebra, and combinatorics. Overall, the book shows how researchers from diverse backgrounds explore connections among the various discrete structures with symmetry as the unifying theme. Contributions present recent trends and advances in discrete geometry, particularly in the theory of polytopes. The rapid development of abstract polytope theory has resulted in a rich theory featuring an attractive interplay of methods and tools from discrete geometry, group theory, classical geometry, hyperbolic geometry and topology. The volume will also be a valuable source as an introduction to the ideas of both combinatorial and geometric rigidity theory and its applications, incorporating the surprising impact of symmetry. It will appeal to students at both the advanced undergraduate and graduate levels, as well as postdocs, structural engineers, and chemists.

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