1. Record Nr. UNINA9910456149703321

Autore	Hsiang Wu Yi <1937->
Titolo	Least action principle of crystal formation of dense packing type and the proof of Kepler's conjecture [[electronic resource] /] / Hsiang, Wu-Yi
Pubbl/distr/stampa	Singapore ; ; River Edge, NJ, : World Scientific, 2001
ISBN	1-281-86970-8 9786611869700 981-238-491-X
Descrizione fisica	1 online resource (425 p.)
Collana	Nankai tracts in mathematics
Disciplina	511/.6 516
Soggetti	Kepler's conjecture Sphere packings Crystallography, Mathematical Electronic books.
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.
Nota di contenuto	Contents; Foreword; Acknowledgment; List of Symbols; Chapter 1 Introduction; Chapter 2 The Basics of Euclidean and Spherical Geometries and a New Proof of the Problem of Thirteen Spheres; Chapter 3 Circle Packings and Sphere Packings; Chapter 4 Geometry of Local Cells and Specific Volume Estimation Techniques for Local Cells; Chapter 5 Estimates of Total Buckling Height; Chapter 6 The Proof of the Dodecahedron Conjecture; Chapter 7 Geometry of Type I Configurations and Local Extensions; Chapter 8 The Proof of Main Theorem I; Chapter 9 Retrospects and Prospects; References; Index
Sommario/riassunto	The dense packing of microscopic spheres (i.e. atoms) is the basic geometric arrangement in crystals of mono-atomic elements with weak covalent bonds, which achieves the optimal ""known density"" of p/v18. In 1611, Johannes Kepler had already ""conjectured"" that p/v18 should be the optimal ""density"" of sphere packings. Thus, the central problems in the study of sphere packings are the proof of Kepler's conjecture that p/v18 is the optimal density, and the establishing of

the least action principle that the hexagonal dense packings in crystals are the geometric consequence of optimization of