

1. Record Nr.	UNINA9910492144303321
Autore	D'Angelo John P.
Titolo	Rational sphere maps // John P. D'Angelo
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2021] ©2021
ISBN	3-030-75809-5
Descrizione fisica	1 online resource (244 pages)
Collana	Progress in Mathematics ; ; Volume 341
Disciplina	515.53
Soggetti	Spherical functions Euclidean algorithm Funcions esferoïdals Algorismes Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Preface -- Contents -- 1 Complex Euclidean Space -- 1 Generalities -- 2 The Groups $\text{Aut}(\mathbb{B}^1)$, $\text{SU}(2)$, and $\text{SU}(1,1)$ -- 3 Automorphisms of the Unit Ball -- 4 Hermitian Forms -- 5 Proper Mappings -- 6 Some Counting -- 7 A GPS for This Book -- 2 Examples and Properties of Rational Sphere Maps -- 1 Definition and Basic Results about Rational Sphere Maps -- 2 Sphere-Ranks and Target-Ranks -- 3 Ranks of Products -- 4 Juxtaposition -- 5 The Tensor Product Operation -- 6 The Restricted Tensor Product Operation -- 7 An Abundance of Rational Sphere Maps -- 8 Some Results in Low Codimension -- 9 A Result in Sufficiently High Codimension -- 10 Homotopy and Target-Rank -- 11 Remarks on Degree Bounds -- 12 Inverse Image of a Point -- 13 The General Rational Sphere Map -- 14 A Detailed Rational Example -- 15 An Example in Source Dimension 3 -- 3 Monomial Sphere Maps -- 1 Properties of Monomial Sphere Maps -- 2 Some Remarkable Monomial Sphere Maps -- 3 More on These Remarkable Polynomials -- 4 Cyclic Groups and Monomial Sphere Maps -- 5 Circulant Matrices -- 6 The Pell Equation -- 7 Elaboration of the Method for Producing Sharp Polynomials -- 8 Additional Tricks -- 9 Maps with Source Dimension 2 and Target Dimension 4 -- 10 Target-

Ranks for Monomial Sphere Maps -- 4 Monomial Sphere Maps and Linear Programming -- 1 Underdetermined Linear Systems -- 2 An Optimization Problem for Monomial Sphere Maps -- 3 Two Detailed Examples in Source Dimension 2 -- 4 Results of Coding and Consequences in Source Dimension 2 -- 5 Monomial Sphere Maps in Higher Dimension -- 6 Sparseness in Source Dimension 2 -- 7 Sparseness in Source Dimension at Least Three -- 8 The Optimal Polynomials in Degrees 9 and 11 -- 9 Coding -- 5 Groups Associated with Holomorphic Mappings -- 1 Five Groups -- 2 Examples of the Five Groups -- 3 Hermitian-Invariant Groups for Rational Sphere Maps. 4 Additional Examples -- 5 Behavior of f Under Various Constructions -- 6 Examples Involving the Symmetric Group -- 7 The Symmetric Group -- 8 Groups Arising from Rational Sphere Maps -- 9 Different Representations -- 10 Additional Results -- 11 A Criterion for Being a Polynomial -- 6 Elementary Complex and CR Geometry -- 1 Subvarieties of the Unit Ball -- 2 The Unbounded Realization of the Unit Sphere -- 3 Geometry of Real Hypersurfaces -- 4 CR Functions and Mappings -- 5 Strong Pseudoconvexity of the Unit Sphere -- 6 Comparison with the Real Case -- 7 Varieties Associated with Rational Sphere Maps -- 8 Examples of X_f -- 9 A Return to the Definition of Rational Sphere Map -- 7 Geometric Properties of Rational Sphere Maps -- 1 Volumes -- 2 A Geometric Result in One Dimension -- 3 An Integral Inequality -- 4 Volume Inequalities for Polynomial and Rational Sphere Maps -- 5 Comparison with a Real Variable Integral Inequality -- 8 List of Open Problems -- Appendix Bibliography -- -- Index.
