1. Record Nr. UNINA9910968297703321 Autore Wenger Rephael Titolo Isosurfaces: geometry, topology, and algorithms // Rephael Wenger Pubbl/distr/stampa Boca Raton,: CRC Press, 2013 Boca Raton:,: CRC Press,, 2013 **ISBN** 1-04-019734-5 0-429-10186-4 1-4665-7102-0 Edizione [1st ed.] Descrizione fisica 1 online resource (484 p.) Classificazione COM012000COM012040MAT012000 Disciplina 516.3/52 Soggetti Surfaces Isogeometric analysis Three-dimensional imaging - Mathematics Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali An AK Peters Book. Nota di bibliografia Includes bibliographical references. Nota di contenuto Front Cover; Dedication; Contents; Preface; Acknowledgments; Chapter 1: Introduction; Chapter 2: Marching Cubes and Variants; Chapter 3: Dual Contouring: Chapter 4: Multilinear Interpolation: Chapter 5: Isosurface Patch Construction: Chapter 6: Isosurface Generation in 4D: Chapter 7: Interval Volumes: Chapter 8: Data Structures for Faster Isosurface Construction; Chapter 9: Multiresolution Tetrahedal Meshes; Chapter 10: Multiresolution Polyhedral Meshes; Chapter 11: Isovalues; Chapter 12: Contour Trees; Appendix A: Geometry; Appendix B: Topology; Appendix C: Graph Theory; Appendix D: Notation Bibliography Ever since Lorensen and Cline published their paper on the marching Sommario/riassunto cubes algorithm, isosurfaces have been a standard technique for the visualization of 3D volumetric data. Yet there is no book exclusively devoted to isosurfaces. This book presents the basic algorithms for isosurface construction and gives a rigorous mathematical perspective to some of the algorithms and results. It offers a solid introduction to

research in this area as well as an organized overview of the various

algorithms associated with isosurfaces--