1. Record Nr. UNISA996418441003316 Autore Papadimitriou Fivos Titolo Spatial complexity: theory, mathematical methods and applications // Fivos Papadimitriou Pubbl/distr/stampa Cham, Switzerland: ,: Springer, , [2020] ©2020 **ISBN** 3-030-59671-0 Edizione [1st ed. 2020.] Descrizione fisica 1 online resource (XXI, 298 p. 178 illus., 149 illus. in color.) Disciplina 519.536 Soggetti Complex Systems Geography, general **Topology** Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Includes index. Nota di contenuto What is Spatial Complexity? -- Spatial Complexity in Nature --Scientific and Technological Applications of Spatial Complexity --Geometry and Spatial Complexity -- Probabilities and Spatial Complexity -- Algorithms and Spatial -- Complexity -- Topology and Spatial Complexity -- Creating Spatial Complexity from simple Maps --Spatial Entropy and Spatial Complexity -- Spatial Information and Spatial Complexity -- Enigmas of Spatial Complexity -- Spatial Complexity on 3-Dimensional Surfaces -- Spatial Complexity in 4-Dimensional Spaces -- Spatial Complexity and Aesthetics -- Spatial Complexity and Psychology -- Philosophical Perspectives on Spatial Complexity -- Future Research in Spatial Complexity. This book delivers stimulating input for a broad range of researchers. Sommario/riassunto from geographers and ecologists to psychologists interested in spatial perception and physicists researching in complex systems. How can one decide whether one surface or spatial object is more complex than

another? What does it require to measure the spatial complexity of small maps, and why does this matter for nature, science and technology? Drawing from algorithmics, geometry, topology,

probability and informatics, and with examples from everyday life, the reader is invited to cross the borders into the bewildering realm of

spatial complexity, as it emerges from the study of geographic maps, landscapes, surfaces, knots, 3D and 4D objects. The mathematical and cartographic experiments described in this book lead to hypotheses and enigmas with ramifications in aesthetics and epistemology.