Record Nr. UNINA9910143746103321 Topological data structures for surfaces [[electronic resource]]: an **Titolo** introduction to geographical information science / / editor, Sanjay Rana Pubbl/distr/stampa Chichester, West Sussex, England;; Hoboken, NJ,: J. Wiley & Sons, c2004 **ISBN** 1-280-28750-0 9786610287505 0-470-02028-8 0-470-02027-X Descrizione fisica 1 online resource (217 p.) Altri autori (Persone) RanaSanjay Disciplina 910.01515 910.285 910/.285 Soggetti Geographic information systems Information storage and retrieval systems - Geography Geography - Data processing 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 (p. [185]-195) and index. Nota di contenuto Topological Data Structures for Surfaces; Contents; List of Contributors; Foreword; Preface; INTRODUCTION; 1 Introduction; PART I CONCEPTS AND IMPLEMENTATIONS; 2 Topographic Surfaces and Surface Networks; 3 Algorithms for Extracting Surface Topology from Digital Elevation Models; 4 Construction of Metric Surface Networks from Raster-Based DEMs: 5 Contour Trees and Small Seed Sets for Isosurface Generation: 6 Surface Shape Understanding Based on Extended Reeb Graphs; PART II **APPLICATIONS** 7 A Method for Measuring Structural Similarity among Activity Surfaces and its Application to the Analysis of Urban Population Surfaces in Japan8 Topology Diagram of Scalar Fields in Scientific Visualisation; 9 Topology-Guided Downsampling and Volume Visualisation; 10 Application of Surface Networks for Augmenting the Visualisation of Dynamic Geographic Surfaces; 11 An Application of Surface Networks

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In Geography and GIS, surfaces can be analysed and visualised through various data structures, and topological data structures describe surfaces in the form of a relationship between certain surface-specific features. Drawn from many disciplines with a strong applied aspect, this is a research-led, interdisciplinary approach to the creation, analysis and visualisation of surfaces, focussing on topological data structures. Topological Data Structures for Surfaces: an introduction for Geographical Information Science describes the concepts and applications of these data structures. The