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Autore	Ammari Habib M.
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Nota di contenuto	General Introduction -- Fundamental Concepts, Definitions, and Models -- A Planar Percolation-Theoretic Approach to Coverage and Connectivity -- A Spatial Percolation-Theoretic Approach to Coverage and Connectivity -- A Planar Convexity Theory-Based Approach for Connected k-Coverage -- Planar Convexity Theory-Based Approaches for Heterogeneous, On-Demand, and Stochastic Connected k-Coverage -- Spatial Convexity Theory-Based Approaches for Connected k–

Coverage.

Sommario/riassunto

This book aims at developing a reader’s thorough understanding of the challenges and opportunities of two categories of networks, namely k-covered wireless sensor networks and k-barrier covered wireless sensor networks. It presents a variety of theoretical studies based on percolation theory, convexity theory, and applied computational geometry, as well as the algorithms and protocols that are essential to their design, analysis, and development. Particularly, this book focuses on the cover, sense, and inform (CSI) paradigm with a goal to build a unified framework, where connected k-coverage (or k-barrier coverage), sensor scheduling, and geographic data forwarding, gathering, and delivery are jointly considered. It provides the interested reader with a fine study of the above networks, which can be covered in introductory and advanced courses on wireless sensor networks. This book is useful to senior undergraduate and graduate students in computer science, computer engineering, electrical engineering, information science, information technology, mathematics, and any related discipline. Also, it is of interest to computer scientists, researchers, and practitioners in academia and industry with interest in these two networks from their deployment until data gathering and delivery.