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Sommario/riassunto

An important resource that examines wireless communications from the point of view of its mathematical and physical aspects The Physics and Mathematics of Electromagnetic Wave Propagation in Cellular Wireless Communication describes the electromagnetic principles involved in the design of a cellular wireless system including a number of subtleties that are often overlooked. This important text explores both the physics and mathematical concepts used in deploying antennas for transmission and reception of electromagnetic signals and examines how to select the proper methodology from a wide range of scenarios. In this much-needed guide, the authors—noted experts in the field—explore the principle of electromagnetics as developed through Maxwell's equations and describe the properties of an antenna in the frequency domain. The text also includes a review of the characterization of propagation path loss in a cellular wireless environment and examines ultrawideband antennas and the mechanisms of broadband transmission of both power and information. This important resource: . Includes a discussion of the shortcomings of a MIMO system from both theoretical and practical aspects. Demonstrates how to deploy base station antennas with better efficiency. Validates the principle and the theoretical analysis of

electromagnetic propagation in cellular wireless communication. Contains results of experiments that are solidly grounded in mathematics and physics Written for engineers, researchers, and educators who are or plan to work in the field, The Physics and Mathematics of Electromagnetic Wave Propagation in Cellular Wireless Communication offers an essential resource for understanding the principles underpinning wireless communications.
