1. Record Nr. UNINA9910555036903321

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Titolo	Fiber optic and atmospheric optical communication / / Nathan Blaunstein, Shlomo Engelberg, Evgenii Krouk, Mikhail Sergeev
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , [2020] [Piscataqay, New Jersey] : , : IEEE Xplore, , [2019]
ISBN	1-119-60203-3 1-119-60201-7 1-119-60202-5
Descrizione fisica	1 online resource (227 pages)
Disciplina	621.38275
Soggetti	Optical fiber communication
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Optical Communication Link Fundamentals. Basic Elements of Optical Communication -- Optical Wave Propagation -- Fundamentals of Optical Communication. Types of Signals in Optical Communication Channels -- An Introduction to the Principles of Coding and Decoding of Discrete Signals -- Coding in Optical Communication Channels -- Fading in Optical Communication Channels -- Modulation of Signals in Optical Communication Links -- Optical Sources and Detectors -- Wired Optical Communication Links. Light Waves in Fiber Optic Guiding Structures -- Dispersion Properties of Fiber Optic Structures -- Wireless Optical Channels. Atmospheric Communication Channels -- Data Stream Parameters in Atmospheric and Fiber Optic Communication Links with Fading. Transmission of Information Data in Optical Channels: Atmospheric and Fiber Optics.
Sommario/riassunto	A GUIDE TO THE FUNDAMENTAL THEORY AND PRACTICE OF OPTICAL COMMUNICATION Fiber Optic and Atmospheric Optical Communication offers a much needed guide to characterizing and overcoming the drawbacks associated with optical communication links that suffer from various types of fading when optical signals with information traverse these wireless "atmospheric" or wired "fiber optic" channels. The authors—noted experts on the topic—present material that

aids in predicting the capacity, data rate, spectral efficiency, and bit-error-rate associated with a channel that experiences fading. They review modulation techniques and methods of coding and decoding that are useful when implementing communications systems. The book also discusses how to model the channels, including treating distortion due to the various fading phenomena. Light waves and their similarity to radio waves are explored, and the way light propagates through the atmosphere, through materials, and through the boundary between two materials is explained. This important book: . Characterizes principal optical sources and detectors, including descriptions of their advantages and disadvantages, to show how to design systems from start to finish. Provides a new method of predicting and dealing with the dispersive properties of fiber optic cables and other optical guiding structures in order to increase data stream capacity. Highlights effects of material and multimode "multi-ray" dispersion during propagation of optical signals with data through fiber optic channels. Presents modulation techniques and methods of coding and decoding that are useful when implementing communications systems Written for professionals dealing with optical and electro-optical communications, Fiber Optic and Atmospheric Optical Communication explores the theory and practice of optical communication both when the optical signal is propagating through the atmosphere and when it is propagating through an optical fiber.