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COLON JORDON

Noise Models in Optical-Wireless Communication Systems Springer

This book introduces double-prism multi-mode scanning theory and technology, focusing on double Risley-prism, multi-mode scanning models, methods and key techniques applied in multi-mode optical scanning and target tracking fields. It is first book to systematically and comprehensively describe basic multi-mode scanning theory and practical implementation techniques utilizing double Risley prisms. It includes rigorous modeling of double Risley-prism multi-mode scanning systems and high-efficiency solution algorithms for inverse problems with abundant illustrative examples and scanning error analyses, along with design guidance and performance test on specific scanning devices. Further, it presents the latest research results for forward scanning models and inverse tracking algorithms, sub-microradian fine scanning modeling with tilting double Risley prisms, nonlinear control strategy for double prism motion, calibration and experiment techniques for various double-prism layouts, as well as opto-mechanical system design and analysis. Featuring rigorous theoretical derivations illustrated with corresponding examples and original scanning apparatus, the book is a valuable reference resource for those developing and applying multi-mode scanning techniques in photoelectric scanning and tracking areas.

International Aerospace Abstracts CRC Press

In this book Joan Lisa Bromberg brings a historian's broad perspective to bear on the formative years of laser research in the United States.

Proceedings of 2024 12th China Conference on Command and Control Springer Nature

This book presents high-quality papers from the Fourth International Conference on Microelectronics, Computing & Communication Systems (MCCS 2019). It discusses the latest technological trends and advances in MEMS and nanoelectronics, wireless communication, optical communication, instrumentation, signal processing, image processing, bioengineering, green energy, hybrid vehicles, environmental science, weather forecasting, cloud computing, renewable energy, RFID, CMOS sensors, actuators, transducers, telemetry systems, embedded systems and sensor network applications. It includes papers based on original theoretical, practical and experimental simulations, development, applications, measurements and testing. The applications and solutions discussed here provide excellent reference material for future product development.

Optical and Microwave Technologies for Telecommunication Networks Springer Nature

Optical communications systems are very important for all types of telecommunications and networks. They consists of a transmitter that encodes a message into an optical signal, a channel that carries the signal to its destination, and a receiver that reproduces the message from the received optical signal. This book presents up to date results on communication systems, along with the explanations of their relevance, from leading researchers in this field. Its chapters cover general concepts of optical and wireless optical communication systems, optical amplifiers and networks, optical multiplexing and demultiplexing for optical communication systems, and network traffic engineering. Recently, wavelength conversion and other enhanced signal processing functions are also considered in depth for optical communications systems. The researcher has also concentrated on wavelength conversion, switching, demultiplexing in the time domain and other enhanced functions for optical communications systems. This book is targeted at research, development and design engineers from the teams in manufacturing industry; academia and telecommunications service operators/ providers.

Spatial Optical-Fiber Coupling Technology in Optical-Wireless Communication Artech House Publishers

Annotation First book on Free Space Optics (FSO) in the marketplace. Comprehensive book that covers fundamentals through benefits and deployment pit falls. First comprehensive book about FSO, written by two experts in the field. Explores FSO as an alternative to cable and fiber as last-mile solutions. Enables readers to maximize the benefits of FSO and anticipate potential deployment pitfalls. Free Space Optics begins with the fundamentals of the technology before launching into FSO topologies, deployment issues, applications, and case studies. Baksheesh Ghuman is Vice President of Marketing at LightPointe Communications, Inc. Ghuman has worked in optical and telecommunications for over 12 years, focusing on marketing, product development, and applications engineering. He holds a Master of Science in Telecommunications Management from Golden State University, San Francisco. Dr. Heinz Willebrand is Chief Technology Officer of LightPointe Communications where he leads all of LightPointe's R&D activities in the field of free space wireless RF and high-speed optical laser communication systems. Prior to LightPointe, Dr. Willebrand was a research professor at the University of Boulder, Colorado, where he taught classes on fiber optic and wireless technologies and researched areas such as fiber optics and high-speed computer interconnections.

Quantum Communication and Quantum Networking Springer Nature

A concise volume exploring the basic fundamentals of modern laser communication systems, this book provides comprehensive information from a system designer's point of view. The book provides a thorough review of history, architectures, design methodologies, optical design guidelines, and tracking and communication processes. It explains exactly how to design a laser communication system and its potential applications.

Free-Space Laser Communications Springer Nature

This book collects selected papers from the 28th Conference of Spacecraft TT&C Technology in China held on November 8-10, 2016. The book

features state-of-the-art studies on spacecraft TT&C in China with the theme of "Openness, Integration and Intelligent Interconnection". To meet requirements of new space endeavors, development of spacecraft instrumentation systems have to follow an open concept and approach in China. An open spacecraft instrumentation system encompasses integrated development of different types of services, integration of disciplines and specialties, intelligent links, and more scientific and intelligent information interface technology. Researchers and engineers in the field of aerospace engineering and communication engineering can benefit from the book.

A Collection of Technical Papers Sams Publishing

This book contains best selected research papers presented at ICTCS 2022: Seventh International Conference on Information and Communication Technology for Competitive Strategies. The conference will be held in Chandigarh, India, during December 9-10, 2022. The book covers state-of-the-art as well as emerging topics pertaining to ICT and effective strategies for its implementation for engineering and managerial applications. This book contains papers mainly focused on ICT for computation, algorithms and data analytics and IT security. The work is presented in two volumes.

Information and Communication Technology for Competitive Strategies (ICTCS 2022) Springer Science & Business Media

This book presents the key technologies of coherent optical wireless communication, covers topics such as beam coupling, signal optical polarization control and distorted wavefront correction. It discusses the principle of coherent optical communication and heterodyne detection conditions. In this book, the array coupling receiving technology and large aperture coupling technology are introduced to realize the spatial optical fiber coupling; simulated annealing algorithm, particle swarm optimization algorithm and SPO algorithm are used to control the polarization state of the signal beam; and the correction of distorted wavefront of the signal beam by adaptive optics technology and wavefront sensorless adaptive optics technology are analyzed, and the influence of beam mode on coherent detection performance is elaborated. Both theoretical deduction and experimental results are included in this book, which can help readers further understand the theoretical knowledge.

Proceedings of the Fourth International Conference on Microelectronics, Computing and Communication Systems Springer Nature

The book focuses on the integration of intelligent communication systems, control systems, and devices related to all aspects of engineering and sciences. It includes high-quality research papers from the 3rd international conference, ICICCD 2018, organized by the Department of Electronics, Instrumentation and Control Engineering at the University of Petroleum and Energy Studies, Dehradun on 21-22 December 2018. Covering a range of recent advances in intelligent communication, intelligent control and intelligent devices., the book presents original research and findings as well as researchers' and industrial practitioners' practical development experiences of.

Underwater Communications and Networks CRC Press

This book gathers high-quality papers presented at the First International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2019), which was organized by Sri Balaji College of Engineering and Technology, Jaipur, Rajasthan, India, on March 29-30, 2019. It covers emerging topics in computational intelligence and effective strategies for its implementation in engineering applications.

Laser Space Communications Springer Nature

This is a self-contained book on the foundations and applications of optical and microwave technologies to telecommunication networks application, with an emphasis on access, local, road, cars, trains, vessels and airplanes, indoor and in-car data transmission as well as for long-distance fiber-systems and application in outer space and automation technology. The book provides a systematic discussion of physics/optics, electromagnetic wave theory, optical fibre technology, and the potential and limitations of optical and microwave transmission.

Wireless Communications, Networking and Applications Springer

This book introduces in detail the theory of adaptive optics and its correction technology for light wave distortion in wireless optical communication. It discusses the adaptive control algorithm of wavefront distortion, proportional+integral control algorithm and iterative control algorithm, and double fuzzy adaptive PID control algorithm. It also covers the SPGD algorithm of adaptive optics correction, deformable mirrors eigenmode method of wavefront aberration correction, vortex beam wavefront detecting wavefront aberration correction, liquid crystal spatial light modulator wavefront correction, different wavelengths of Gaussian beam transmission wavefront differences in the atmospheric turbulence and correction and with wavefront tilt correction adaptive optics wavefront aberration correction. Various distortion correction methods are verified by experiments and the experimental results are analyzed. This book is suitable for engineering and technical personnel engaged in wireless optical communication, college teachers, graduate students and senior undergraduate students.

Intelligent Communication, Control and Devices Elsevier

Recent progress in ICT has exceeded our expectations for meeting the requirement of multimedia society in the 21st century. The FSOC is considered to be one of the key technologies for realizing very high speed multi Gbps large-capacity terrestrial and aerospace communications. In FSOC, the optical beam propagation in the turbulent atmosphere is severely affected by various factors suspended in the channel. Wavefront aberration correcting with continuous beam alignment are the key requirements for a successful installation of an FSOC system which are the main contributions in our book. Establishment of FSOC setups, development of accurate weather station, measurement of atmospheric attenuation (Att) and turbulence strength (Cn2), development of new models to predict the Att and Cn2, design of Response Surface Model and Artificial Neural Network based on controller, implementation of neural-controller in FPGA and attaining the BER of 6.4×10^{-9} during different outdoor environments. All the original

contributions, newness, findings and experimental results etc., are reported in the book. Subject of work; Wireless Optical Communication. The content of the book can be referred by various application designers and/or academicians for working on FSOC transceiver design, laser cutting, laser metrology, laser surgery, beam focusing & pointing, beacon positioning and coupling etc. Further, all necessary MATLAB and VHDL codes are also given on appropriate pages for the readers' quick/ clear understanding.

[Optical Communications Systems](#) Springer Nature

This book is based on a series of conferences on Wireless Communications, Networking and Applications that have been held on December 27-28, 2014 in Shenzhen, China. The meetings themselves were a response to technological developments in the areas of wireless communications, networking and applications and facilitate researchers, engineers and students to share the latest research results and the advanced research methods of the field. The broad variety of disciplines involved in this research and the differences in approaching the basic problems are probably typical of a developing field of interdisciplinary research. However, some main areas of research and development in the emerging areas of wireless communication technology can now be identified. The contributions to this book are mainly selected from the papers of the conference on wireless communications, networking and applications and reflect the main areas of interest: Section 1 - Emerging Topics in Wireless and Mobile Computing and Communications; Section 2 - Internet of Things and Long Term Evolution Engineering; Section 3 - Resource Allocation and Interference Management; Section 4 - Communication Architecture, Algorithms, Modeling and Evaluation; Section 5 - Security, Privacy, and Trust; and Section 6 - Routing, Position Management and Network Topologies.

Proceedings of the 28th Conference of Spacecraft TT&C Technology in China Springer Nature

This is a comprehensive tutorial on the emerging technology of free-space laser communications (FSLC). The book offers an all-inclusive source of information on the basics of FSLC, and a review of state-of-the-art technologies. Coverage includes atmospheric effects for laser propagation and FSLC systems performance and design. Free-Space Laser Communications is a valuable resource for engineers, scientists and students interested in laser communication systems designed for the atmospheric optical channel.

Laser Communications in Space BoD – Books on Demand

Optical Wireless Communications for Broadband Global Internet Connectivity: Fundamental and Potential Applications provides a comprehensive overview for readers who require information about the fundamental science behind optical wireless communications, as well as up-to-date advanced knowledge of the state-of-the-art technologies available today. The book is a useful resource for scientists, researchers, engineers and students interested in understanding optical, wireless communication systems for global channels. Readers will find beneficial knowledge on how related technologies of optical wireless communications can be integrated into achieving worldwide Internet connectivity. - Presents an in-depth coverage of information on optical wireless communication in a single source - Combines the fundamentals with the most recent advanced technology of achieving global Internet access and connectivity - Provides derivations of the mathematical equations - Includes between chapter sections where information and learning from one chapter is connected to other chapters

[Optical Wireless Communications](#) Springer

Fully updated edition of the comprehensive, single-source reference on satellite technology and its applications Covering both the technology and its applications, *Satellite Technology* is a concise reference on satellites for commercial, scientific and military purposes. The book explains satellite technology fully, beginning by offering an introduction to the fundamentals, before covering orbits and trajectories, launch and in-orbit operations, hardware, communication techniques, multiple access techniques, and link design fundamentals. This new edition also includes comprehensive chapters on Satellite Networks and Satellite Technology – Emerging Trends. Providing a complete survey of applications, from remote sensing and military uses, to navigational and scientific applications, the authors also present an inclusive compendium on satellites and satellite launch vehicles. Filled with diagrams and illustrations, this book serves as an ideal introduction for those new to the topic, as well as a reference point for professionals. Fully updated edition of the comprehensive, single-source reference on satellite technology and its applications - remote sensing, weather, navigation, scientific, and military - including new chapters on Satellite Networks and Satellite Technology – Emerging Trends Covers the full range of satellite applications in remote sensing, meteorology, the military, navigation and science, and communications, including satellite-to-under sea communication, satellite cell-phones, and global Xpress system of INMARSAT The cross-disciplinary coverage makes the book an essential reference book for professionals, R&D scientists and students at post graduate level Companion website provides a complete compendium on satellites and satellite launch vehicles An ideal introduction for Professionals and R&D scientists in the field. Engineering Students. Cross disciplinary information for engineers and technical managers.

Optical Wireless Communications for Broadband Global Internet Connectivity SPIE Press

Selected, peer reviewed papers from the 2013 3rd International Conference on Materials Science and Information Technology (MSIT 2013), September 14-15, 2013, Nanjing, Jiangsu, China

[Near-Earth Laser Communications](#) Walter de Gruyter GmbH & Co KG

This book focuses on optical wireless communications (OWC), an emerging technology with huge potential for the provision of pervasive and reliable next-generation communications networks. It shows how the development of novel and efficient wireless technologies can contribute to a range of transmission links essential for the heterogeneous networks of the future to support various communications services and traffic patterns with ever-increasing demands for higher data-transfer rates. The book starts with a chapter reviewing the OWC field, which explains different sub-technologies (visible-light, ultraviolet (UV) and infrared (IR) communications) and introduces the spectrum of application areas (indoor, vehicular, terrestrial, underwater, intersatellite, deep space, etc.). This provides readers with the necessary background information to understand the specialist material in the main body of the book, which is in four parts. The first of these deals with propagation modelling and channel characterization of OWC channels at different spectral bands and with different applications. The second starts by providing a unified information-theoretic treatment of OWC and then discusses advanced physical-layer methodologies (including, but not limited to: advanced coding, modulation diversity, cooperation and multi-carrier techniques) and the ultimate limitations imposed by practical constraints. On top of the physical layer come the upper-layer protocols and cross-layer designs that are the subject of the third part of the book. The last part of the book features a chapter-by-chapter assessment of selected OWC applications. *Optical Wireless Communications* is a valuable reference guide for academic researchers and practitioners concerned with the future development of the world's communication networks. It succinctly but comprehensively presents the latest advances in the field.