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Autore	Urick Vincent J., Jr. (Vincent Jude), <1979->
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5.5 Stimulated Brillouin Scattering5.6 Stimulated Raman Scattering; 5.7 Cross-Phase Modulation; 5.8 Four-Wave Mixing; 5.9 Polarization Effects; References; Chapter 6 External Intensity Modulation with Direct Detection; 6.1 Concept and Link Architectures; 6.2 Signal Transfer and Gain; 6.3 Noise and Performance Metrics; 6.3.1 General Equations; 6.3.2 Shot-Noise-Limited Equations; 6.3.3 RIN-Limited Equations; 6.3.4 Trade Space Analysis; 6.4 Photodetector Issues and Solutions; 6.5 Linearization Techniques; 6.6 Propagation Effects; References Chapter 7 External Phase Modulation with Interferometric Detection7.1 Introduction; 7.2 Signal Transfer and Gain; 7.3 Noise and Performance Metrics; 7.4 Linearization Techniques; 7.5 Propagation Effects; 7.6 Other Techniques for Optical Phase Demodulation; References; Chapter 8 Other Analog Optical Modulation Methods; 8.1 Direct Laser Modulation; 8.1.1 Direct Intensity Modulation; 8.1.2 Direct Frequency Modulation; 8.2 Suppressed Carrier Modulation with a Low Biased MZM; 8.3 Single-Sideband Modulation; 8.4 Sampled Analog Optical Links; 8.4.1 RF Downconversion Via Sampled Analog Optical Links 8.4.2 Mitigation of Stimulated Brillouin Scattering with Sampled Links8. 5 Polarization Modulation; References; Chapter 9 High Current Photodetectors; 9.1 Photodetector Compression; 9.2 Effects Due to Finite Series Resistance; 9.3 Thermal Limitations; 9.4 Space-Charge Effects; 9.5 Photodetector Power Conversion Efficiency; 9.6 State of the Art for Power Photodetectors; References; Chapter 10 Applications and Trends; 10.1 Point-to-Point Links; 10.2 Analog Fiber Optic Delay Lines; 10.3 Photonic-Based RF Signal Processing; 10.3.1 Wideband Channelization; 10.3.2 Instantaneous Frequency Measurement 10.3.3 Downconversion

Sommario/riassunto

A comprehensive resource to designing andconstructing analog photonic links capable of high RFperformanceFundamentals of Microwave Photonics provides acomprehensive description of analog optical links from basicprinciples to applications. The book is organized into fourparts. The first begins with a historical perspective of microwavephotonics, listing the advantages of fiber optic links anddelineating analog vs. digital links. The second section coversbasic principles associated with microwave photonics in both the RFand optical domains. The third focuses on analog modulationformats-starti

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