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Nota di contenuto	Optical Soliton Theory and Its Applications in Communication -- Linear and Nonlinear Propagation Effects in Optical Fibers -- Nonlinear Waves in Optical Waveguides and Soliton Theory Applications -- Solitons Around Us: Integrable, Hamiltonian and Dissipative Systems -- System Analysis Using the Split Operator Method -- Multicomponent Higher Order Bright Soliton Solutions and Shape Changing Collisions in Coupled Nonlinear Schrödinger Equations -- Mathematical Modelling in

Fiber and Waveguide Grating Structures -- Theory of Gap Solitons in Short Period Gratings -- Impact of Stimulated Raman Scattering in High-Speed Long-Distance Transmission Lines -- Quasi-linear Optical Pulses in Dispersion Managed Fibers: Propagation and Interaction -- Bi-Soliton Propagating in Dispersion-Managed System and Its Application to High Speed and Long Haul Optical Transmission -- Optical Fiber Soliton Lasers -- Nonlinear Phenomena with Ultra-Broadband Optical Radiation in Photonic Crystal Fibers and Hollow Waveguides -- Experimental Study of Modulational Instability and Vector Solitons in Optical Fibers -- Self-structuration of Three-Wave Dissipative Solitons in CW-Pumped Backward Optical Parametric Oscillators -- Spatial Semiconductor-Resonator Solitons -- Propagation and Diffraction of Picosecond Acoustic Wave Packets in the Soliton Regime.

Sommario/riassunto

Optical solitons represent one of the most exciting and fascinating concepts in modern communications, arousing special interest due to their potential applications in optical fibre communication. This volume focuses on the explicit integration of analytical and experimental methods in nonlinear fibre optics and integrated optics. It covers all important recent technical issues in optical-soliton communication. For example, individual chapters are devoted to topics such as dispersion management and fibre Bragg grating. All authors are leading authorities in their fields.