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Nota di contenuto	Recent Progress of Optical Undersea Cable Systems -- 80 Gbit/s Multi-Channel Soliton Transmission over Transoceanic Distances -- Multi-Soliton Transmission and Pulse Shepherding in Bit-Parallel WDM Optical Fiber Systems -- Optical Modulation and Dispersion Compensation Techniques for Ultra-High-Capacity TDM/WDM Transmission Systems -- On the Evolution and Interaction of Dispersion-Managed Solitons -- Experimental Demonstration of Massive WDM Overtransoceanic Distances Using Dispersion Managed Solitons -- On the Dispersion Managed Soliton -- TDM and WDM with Chirped Solitons in Optical Transmission Systems with Distributed Amplification -- Long-Haul Dispersion Managed Soliton WDM Systems Towards Terabit Capacity -- Spectral Efficiency in WDM Soliton Transmissions -- Analysis and Design of Wavelength-Division Multiplexed Dispersion-Managed Soliton Transmission at 40 GBIT/S/CH -- Optimization of Dispersion Compensation for Long Distance 40 Gbit/s Soliton Transmission Lines by the Q-Map Method -- Long Distance Transmission of Filtered Dispersion-Managed Solitons at 40 GB/S Bit Rate -- Optical Communication Systems with Schort-Scale Dispersion Management -- Real Time PMD Compensation for RZ Transmission Systems --

Propagation of 3-PS Dispersion-Managed Soliton Pulse under the Influence of Third-Order Dispersion -- Tolerance of Scalar and Vector Solitons to Random Variations of Map Parameters in Dispersion Managed Optical Fiber Links -- Quantum Correlations of Colliding Solitons -- Symmetry-Breaking and Bistability for Dispersion-Managed Solitons -- 40 Gbit/s Multiple Dispersion Managed Soliton Transmission over 2700 Km -- Enabling Fiber Technologies for Massive WDM and TDM Soliton Transmission Systems -- Collision-Induced Impairments in Dispersion Managed Fiber Systems -- Ultra Low Nonlinearity Pure Silica Core Fiber and its Application to Hybrid Transmission Lines -- Fiber Design for Dispersion Managed Soliton Systems: the Challenge -- 40 Gbit/s Recirculating Loop Experiments on Dispersion Managed Standard Fibre -- Handling Noise in Supercontinuum Generation For WDM Application -- Dense-WDM Soliton Systems Using Channel-Isolating Notch Filters ("Soliton Rail").

Sommario/riassunto

This book summarizes the proceedings of the invited talks presented at the "International Symposium on Massive TDM and WDM Optical Soliton Transmission Systems" held in Kyoto during November 9–12, 1999. The symposium is the third of the series organized by Research Group for Optical Soliton Communications (ROSC) chaired by Akira Hasegawa. The research group, ROSC, was established in Japan in April 1995 with a support of the Japanese Ministry of Post and Telecommunications to promote collaboration and information - change among communication service companies, communication industries and academic circles in the theory and application of optical solitons. The symposium attracted enthusiastic response from worldwide researchers in the field of soliton based communications and intensive discussions were made. In the symposium held in 1997, new concept of soliton transmission based on dispersion management of optical fibers were presented. This new soliton is now called the dispersion managed soliton. The present symposium mainly focuses the theoretical and experimental developments of dispersion managed solitons. It is remarkable that the concept of the dispersion managed soliton, which was just born two years ago when the naming was not even given yet, has become the center of soliton research in two years. The dispersion managed soliton has an enhanced power in maintaining reasonable signal to noise ratio, yet has reduced Gordon-Haus timing jitter by reduced average dispersion. The dispersion managed soliton also has demonstrated its power in soliton based WDM transmissions.
