

Design and development of optical dispersion characterization systems

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Abstrak

This book demonstrates the implementation of an automated measuring system for very efficient measurement of chromatic dispersion, which uses a modulation phase shift method over long haul of optical single mode fiber. The authors show how a new scheme for measuring chromatic dispersion is adopted in conjunction with a tunable laser (TLS), providing the optical power at required wavelength and digital oscilloscope (DOSC) for measuring the phase difference between microwave signals from transmitter and microwave signals at the receiver. This is a novel approach for real-time chromatic dispersion in optical systems such as optical fibers. The setup used is very simple, accurate and cost effective, compared to other methods such as direct measurement, differential mode delay, polarization mode dispersion measurement and phase delay method.