Duty-cycle-division-multiplexing: bit error rate estimation and performance evaluation

ABSTRACT

An improved estimation of bit-error-rate (BER) for electrically multiplexed duty-cycle division multiplexing (E-DCDM), which is based on the probability of error, is presented. Performance of 3 × 10 Gbit/s E-DCDM is investigated in terms of optical signal-to-noise ratio (OSNR) and dispersion tolerance. This technique requires 29.4 dB OSNR and can tolerate ±96 ps/nm chromatic dispersion for the worst user.

Keyword: Optical communication; Multiplexing; Duty-cycle; Probability of error; Optical modulator