Simulative Analysis of the Impact of Non-Linearity in Terms of BER, Q-Factor and Jitter in Optical Soliton Transmission at 40 GB/s.

Abstract

In this paper we have analyzes the impact of chirp factor in terms of Q-factor, BER and jitter with different dispersion parameters for optical Soliton transmission links at 40 Gb/s. The results show that BER is minimum, Q-factor is maximum and the jitter value is minimum at or near 0.7 values of chirp factor, also, the performance Soliton transmission system has optimum value. Further, it has been indicated that BER is increased, Q-factor is decreased and jitter is increased from third order of PMD to second order of PMD to first order of PMD at chirp factor of 0.7 value at which optimum transmission of soliton is done.

References

- Andrekson, Peter A. (1999) "40 Gbt/s soliton transmission on installed fiber lines"; Department of microelectronics, photonics Laboratory Chalmer university of technology.
- Holzlöhner, Ronald et. al (2002) "Experimental and Theoretical Characterization of
Simulative Analysis of the Impact of Non-Linearity in Terms of BER, Q-Factor and Jitter in Optical Soliton Transmission at 40 GB/S.


100- GHz Soliton Pulse Train Generation using Soliton compression of Two Phase side bands from a single DFB Laser. IEEE photo technology letters, vol. 6, no. 10, pp. 1194-1196


Index Terms

Computer Science

Signal Processing
Keywords
Soliton  Ber  Chirp-factor  Q-factor  Jitter  Nrz  Gvd