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## Abstract

In this paper, we have investigated the comparative performance of the dense wavelength division multiplexing system using EDFA amplifier for different data formats i. e. non return to zero rectangular (NRZ-R), non return to zero raised cosine (NRZ-RC), return to zero rectangular (RZ-R) and return to zero raised cosine (RZ-RC) for 384 channels. In the proposed system, optical data is successfully transmitted to a distance of 120 KM. It has been observed that non

linearity which severely distorts the signals is produced more in case of RZ-R, NRZ-R and NRZ-RC whereas RZ-RC compensates the dispersion loss variations and hence the best modulation format for the proposed system. Various results are shown to justify these results.

## References

### ences

- Gaurang R. Bhatt, Rajat Sharma, Uppu Karthik, and Bijoy K. Das, "Dispersion-Free SOI Interleaver for DWDM Applications", Journal of lightwave technology, vol. 30, no. 1, January 1, 2012.
- Peter Ossieur, Cleitus Antony, Aisling M. Clarke, Alan Naughton, Heinz-George Krimmel, Y. Chang, Colin Ford, Anna Borghesani, David G. Moodie, Alistair Poustie, Richard Wyatt, Bob Harmon, Ian Lealman, Graeme Maxwell, Dave Rogers, David W. Smith, Derek Nasset, Russell P. Davey, and Paul D. Townsend, "A 135-km 8192-Split Carrier Distributed DWDM-TDMA PON With 2 32 10 Gb/s Capacity", Journal of lightwave technology, vol. 29, no. 4, February 15, 2011.
- Diptish Dey, "Theory towards an all optical WDM slotted ring MAN with support for optical multicasting", Ph. D. Thesis, University of Twente, June 2003, available at <http://www.tup.utwente.nl/>.
- Lucia Marazzi, Paola Parolari, Simone Seghizzi, and Mario Martinelli, "Raman-Generated Pump Impact on Optical Parametric Amplification", IEEE Photonics Technology Letters, Vol. 16, No. 1, January 2010.
- Jun-Ichi Hashimoto, T. Takagi, T. Kato, G. Sasaki, M. Shigehara, K. Murashima, M. Shiozaki, and T. Iwashima, "Fiber-Bragg-Grating External Cavity Semiconductor Laser (FGL) Module for DWDM Transmission", Journal of lightwave technology, vol. 21, no. 9, September 2009.
- P. J. Urban, E. G. C. Pluk, M. M. de Laat, F. M. Huijskens, G. D. Khoe, A. M. J. Koonen, and H. de Waardt, "1.25-Gb/s Transmission Over an Access Network Link With Tunable OADM and a Reflective SOA", IEEE Photonics technology letters, vol. 21, no. 6, March 15, 2009, pp. 380-382.
- Thomas Torounidis, Henrik Sunnerud, Per Olof Hedekvist, and Peter A. Andrekson, "Amplification of WDM Signals in Fiber-Based Optical Parametric Amplifiers", IEEE Photonics Technology Letters, VOL. 15, NO. 8, AUGUST 2003.
- R. Ramaswami, N. J. Sivarajan "Optical Networks, a practical perspective", second edition, Elsevier Science and Technology books, November 2001.
- G. P. Agrawal, Fiber-Optic Communication Systems. New York: Wiley, 1997.
- ITU Standard G. 661 (07/07), "Definitions and test methods for the relevant generic parameters of optical amplifier devices and subsystems" (pre-published), International Telecommunication Union, 2007.
- T. Sabapathi, S. Sundaravadivelu, "Analysis of bottlenecks in DWDM fiber optic communication system", Optik, vol. 122, pg. 1453– 1457, 2011.
- S. Zafar Ali, M. K. Islamb, M. Zafrullah, "Effect of transmission fiber on dense wavelength division multiplexed (DWDM) chaos synchronization", Optik, pages – 1-5, 2012.

Computer Science

**Index Terms**

Networks

**Keywords**

Dwdm Edfa Modulation Formats Nrz Rz