

Wavelength Conversion of Dispersion Managed Solitons at 100 Gbps through Semiconductor Optical Amplifier

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Abstract : All optical wavelength conversion is essential in present day optical networks for transparent interoperability, contention resolution, and wavelength routing. The incorporation of all optical wavelength convertors leads to better utilization of the network resources and hence improves the efficiency of optical networks. Wavelength convertors that can work with Dispersion Managed (DM) solitons are attractive due to their superior transmission capabilities. In this paper, wavelength conversion for dispersion managed soliton signals was demonstrated at 100 Gbps through semiconductor optical amplifier and an optical filter. The wavelength conversion was achieved for a 1550 nm input signal to 1555 nm output signal. The output signal was measured in terms of BER, Q factor and system margin.

Keywords : all optical wavelength conversion, dispersion managed solitons, semiconductor optical amplifier, cross gain modulation

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