

Performance measurement of various modulation formats in the presence of dispersion and non linear effects for WDM optical systems.

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#### Abstract

Increase in the data rate of fiber optic communication system is limited due to dispersive and nonlinear effects of the fiber medium. In this paper for the first time to the author's knowledge we have estimated the optimal length of dispersive compensating fiber which is determined by varying the DCF length to obtain high Q factor for various input power levels. Also we have simulated 16 and 32 DWDM channels for the data rate of 40 Gb/s and determined the Q factor for various modulation formats for the non linear dispersive fiber .

#### OPTICAL MONITORING OF BILIRUBIN - SIMULATION AND EXPERIMENTAL RESULTS

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#### ABSTRACT

Optical methods are now gaining importance for noninvasive diagnosis of diseases. This paper is a report of a study carried out to investigate the potential of optics for monitoring cutaneous bilirubin in adults to detect hyperbilirubinemia, commonly called as jaundice. Studies have indicated that cutaneous bilirubin is an effective indicator of serum bilirubin. The spectral characteristics of bilirubin show that by subtracting the skin reflectance of the different skin components, the contribution of bilirubin can alone be found. A computational skin model based on Monte Carlo is simulated which predicts the reflectance behaviour of jaundiced skin. The simulation results are corroborated by experimental measurements taken on a test adult population.