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## ABSTRACT

In optical communication system, high bit rate is an important factor. This necessity can be fulfilled by soliton-based communication system. Soliton pulses could maintain their shapes through the propagation process without effected dispersion factor. Dispersion factor is an influenced factor that limiting bandwidth in optical communication system. Soliton pulse represents well balanced condition from factor of Group Velocity Dispersion (GVD) and Self Phase Modulation (SPM) in anomalous dispersion region, through the propagation in a single-mode fiber optic given by Non Linear Schrödinger Equation.

This final project studied some parameters which can influence pulse propagation in optical fiber. Those are fiber loss, amplifier spacing, two soliton interaction, and timing jitter. To visualizing them and all of analysis hence be used software MATLAB and calculation mathematically.

From the analysis will be known the influences of those parameters to BL Product, where bit rate compared with the total transmission distance. It will be necessary when we design an optical soliton link.

*STTTELKOM*