Abstract

The goal of an optical fiber communication system is to transmit the maximum number of bits per second over the maximum possible distance with the fewest errors. Single mode optical fibers have already been one of the major transmission media for long distance telecommunication, with very low-losses and wide-bandwidth. The most important properties that affect system performance are fiber attenuation and dispersion. Attenuation limits the maximum distance. While dispersion of the optical pulse as it travels along the fiber limits the information capacity of the fiber. But using of optical amplifiers allows us to eliminate the limiting of the length of section between the transmitter and the receiver. Evaluating the performance of optical fiber communication systems using only analytical techniques is very difficult. In these cases it is important using computer aided techniques, like simulation, to study the performance
of these systems. This paper will describe a computer simulation program for the analysis of some of optical communication components like amplifiers, and filters, used in single mode optical fiber systems for compensating the attenuation and dispersion caused by the long distance.

References

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