

Abstract

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SPM and XPM crosstalk in WDM systems with DRA: Channel spacing and attenuation effects

This paper presents a theoretical analysis of a closed formula for nonlinear crosstalk due to self-phase modulation (SPM) and cross phase modulation (XPM) in wavelength division multiplexing (WDM) systems. The influence of channel spacing and attenuation on the system behavior is modeled and investigated. The system under consideration is a standard single-mode fiber (SSMF) with a single-span distributed Raman amplifier (DRA) and is operating at 100 Gbps.