SOA/SPD-based incoherent SAC-OCDMA system at 9×5gbps

Abstract

To boost the performance of spectral-amplitude coding optical code-division multiple-access (SAC-OCDMA)systems, the need for an effective solution to diminish phase-induced intensity noise (PIIN) is becoming progressively more crucial. In this letter, two PIIN suppression approaches: semiconductor optical amplifier (SOA)-based noise cleaning, and single photodiode detection (SPD) are employed. The performance of the hybrid SOA/SPD scheme is validated through simulation experiments. Our results show that SOA/SPDscheme remarkably improves the performance and increases the throughput of SAC-OCDMA system.

Keywords