Budowa Silesia Photonics

Fiber Optic Multi-Channel Regeneration Method

Overview

We discuss simultaneous and independent 2R regeneration of many WDM channels, enabled by a group-delay-managed nonlinear medium, in which high intra-channel nonlinearity can be accumulated without suffering from the nonlinear inter-channel crosstalk. We demonstrate, for the first time to our knowledge, simultaneous all-optical regeneration of up. Citation (APA): Wang, J. Optics Express, 22(10), 11456-11464. Vasilyev, "Multi-Channel All-Optical Signal Regeneration," in Optical Fiber Communication Conference (OFC) 2019, OSA Technical Digest (Optica Publishing Group, 2019), paper W4F. When high power launched in optical fiber, several nonlinear transmission impairment such as ampl tude noise, phase noise, power spectral losses, that degrades the performance of optical. We have proposed a novel multi-channel regeneration scheme for wavelength division multiplexed systems, which is based on four wave mixing in a highly nonlinear fiber. A 40-channel wavelength division multiplexed signal having data rate of 10 Gbps per channel is divided into five groups.

Article Content

All-optical regenerator of multi-channel signals

Building upon the 12-channel recirculating-loop results, this 16-channel experiment represents the first, to the best of our knowledge, demonstration of a truly multi-channel 2R regenerating device.

All-optical regenerator of multi-channel signals

We demonstrate, for the first time to our knowledge, simultaneous all-optical regeneration of up to 16 wavelength-division-multiplexing channels by one device. This multi-channel concept...

Multi-Channel All-Optical Signal Regeneration

We discuss simultaneous and independent 2R regeneration of many WDM channels, enabled by a group-delay-managed nonlinear medium, in which high intra-channel nonlinearity can be ...

Progress in Multichannel All-Optical Regeneration Based on ...

In this paper, we review recent promising developments in this area. First, we recall the basic principles of multichannel regeneration of high bit rate signals in optical communication systems before ...

4 × 160-Gbit/s multi-channel regeneration in a single fiber

Most of the demonstrated multi-channel regeneration schemes are based on fiber nonlinearities. However, inter-channel interferences such as XPM, XGM and FWM usually limit their performance.

All-optical 40 channels regenerator based on four-wave mixing

We have proposed a novel multi-channel regeneration scheme for wavelength division multiplexed systems, which is based on four wave mixing in a highly nonlinear fiber.

JSTQE special issue_Multiwavelength regeneration_invited ...

This paper reviews some of the techniques that allow multi-wavelength regeneration to be achieved in fiber-based systems, and outlines some of the results achieved to date.

All Regeneration for Optical Communication Network Using ...

process. Figure 1. Shows the system model for the all optical regeneration system using 3R and PSA technique. The model contains the optical transmitt r of 10G DPSK system. Noise emulator ...

Analysis and experiment of all-optical time-interleaved multi-channel ...

Here, we numerically study the time-interleaving multi-channel regeneration to investigate if this scheme can be applied to higher-speed signals with channel number more than two.

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