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Accession number:20114714538072
Title:Novel ultrafast all-optical nonreturn-to-zero to return-to-zero format converter based on Sagnac interferometric structure
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Source title:Optical Engineering
Abbreviated source title:Opt Eng
Volume:47
Issue:7
Issue date:2008
Publication year:2008
Article number:075008
Language:English
ISSN:00913286
E-ISSN:15602303
CODEN:OPEGAR
Document type:Journal article (JA)
Publisher:SPIE, P.O. Box 10, Bellingham, WA 98227-0010, United States
Abstract:Based on the Sagnac interferometric structure, a simple novel ultrafast scheme of an all-optical nonreturn-to-zero (NRZ) to return-to-zero (RZ) is proposed. The operations of this scheme at 40Gbit/s 27-1 PRBS sequences are simulated correctly with an output extinction ratio of more than 19.1dB. Through a built theoretical model and numerical analysis, the operating characteristics of the scheme are illustrated. Furthermore, the carrier recovery time of the semiconductor optical amplifier (SOA) is no longer a crucial parameter to restrict the operation speed of this scheme. This scheme is potentially capable of all-optical NRZ-to-RZ format converter operation speeds to 80Gbit/s thus far.
Number of references:9