Abstracts

System impact of the physical length of unapodized chirped fiber Bragg gratings on dispersion compensation

M.L. Rocha, R. Kashyap, R.F. Souza, A. Paradisi, M.R.X. Barros and C. Coral. "System impact of the physical length of unapodized chirped fiber Bragg gratings on dispersion compensation." 2002 Transactions on Microwave Theory and Techniques 50.1 (Jan. 2002, Part I [T-MTT] (Mini-Special Issue on 1999 International Microwave and Optoelectronics Conference (IMOC'99))): 88-93.

It is shown, for the first time, how the group-delay ripple, due to a pair of identical unapodized dispersion compensating gratings, can be affected by a small change in the physical length of one of the gratings. It is theoretically and experimentally demonstrated that the ripple can be smoothened by a slight difference in length between the gratings. The pair are arranged in a four-port optical circulator in a cascading configuration. System simulations indicate that the performance of the unapodized gratings may be improved by using such a scheme. This has implications for dispersion compensation in high-speed long-haul transmission systems.

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