Abstracts

Maximizing spectral utilization in WDM systems by microwave domain filtering of tandem single sidebands

A. Narasimha, Xuejun Meng, C.F. Lam, M.C. Wu and E. Yablonovitch. "Maximizing spectral utilization in WDM systems by microwave domain filtering of tandem single sidebands." 2001 Transactions on Microwave Theory and Techniques 49.10 (Oct. 2001, Part II [T-MTT] (Special Issue on Microwave and Millimeter-Wave Photonics)): 2042-2047.

We present an optical tandem single-sideband receiver that enables the detection of signals having different information in the two sidebands of the same optical carrier. The technique relies on the use of a dual-electrode Mach-Zehnder modulator and achieves heterodyne detection without the use of an optical local oscillator. Sharp filtering requirements are met in the electrical domain, eliminating the need for wasteful guardbands.

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