Abstracts

Dynamic range of optically amplified RF optical links

D.J.M. Sabido and L.G. Kazovsky. "Dynamic range of optically amplified RF optical links." 2001 Transactions on Microwave Theory and Techniques 49.10 (Oct. 2001, Part II [T-MTT] (Special Issue on Microwave and Millimeter-Wave Photonics)): 1950-1955.

We investigated, theoretically and experimentally, the effect of optical amplification on the dynamic range performance of both externally modulated direct detection and coherent RF optical links. Our results show that, for lowto medium-loss links, a direct detection link with or without an optical amplifier, depending on the loss range, gives the best dynamic range. For high-loss links, the best link to use is a coherent link with the optical amplifier after the modulator. We also showed that the position of an amplifier is an important design parameter; it determines whether or not an optical amplifier improves the link's dynamic range.

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