Abstracts

An analysis of coherent carrier suppression techniques for photonic microwave links

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A theory describing externally modulated, carrier-suppressed photonic microwave links is developed, and the performances of three implementations of the concept are compared. It is shown that such architectures have both RF and optical power handling limitations. It is demonstrated that maximized link gain can be calculated analytically from knowledge of the link component specifications and expected signal environment. It is further shown that the sole determinant of maximum potential link gain improvement is the RF environment, independent of the details of the link architecture, and that this leads to the conclusion that the maximum RF output power available from any link is a constant. General expressions for higher order harmonic content are given.

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