Abstracts

All-Optical Networks As Microwave and Millimeter-Wave Circuits

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In this work we study the use of optical fiber networks to perform microwave processing functions. Theoretical and experimental results are presented in the case of a Mach-Zehnder interferometer network, a Fabry-Perot network, and a combination of the two previous networks. All of these networks are realized with single-mode fiber elements. The use of optical scattering parameters and the graphical representation technique was introduced in our model, which greatly simplified the analysis. A good agreement between modeling and experiment as well as good performances from the microwave point of view are observed.

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