Abstracts

Generalized analysis for a class of linear interferometric networks. Part I. Analysis

O. Schwelb. "Generalized analysis for a class of linear interferometric networks. Part I. Analysis." 1998 Transactions on Microwave Theory and Techniques 46.10 (Oct. 1998, Part I [T-MTT]): 1399-1408.

A method is introduced to simplify the analysis and design of microwave and optoelectronic networks such as spectral filters, interferometric sensors, etc., comprised of 2/spl times/2 couplers, waveguides, reflectors, and mismatched interfaces. The key element which makes it possible to reduce topological complexity and rearrange a network into a chain of cascaded four-ports, is a generalized, single-mode lumped-element 2/spl times/2 coupler with arbitrary coupling paths. As a result, one can now enumerate and evaluate all possible feedback-assisted and resonant configurations. The emphasis is on providing a computationally efficient method of analysis applicable to a wide variety of networks, rather than on obtaining the simplest and most transparent analytical expressions for a particular configuration.

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