Abstracts

Wave Coupling by Warped Normal Modes

A.G. Fox. "Wave Coupling by Warped Normal Modes." 1955 Transactions on Microwave Theory and Techniques 3.6 (Dec. 1955 [T-MTT]): 2-6.

It has been shown by J.S. Cook that wave power may be transferred from one to another of two coupled waveguides through a variation of their phase constants. It is now clear that this is but one example of a new principle of coupling which is here called "nomal mode warping." Wave power inserted at one end of a coupled waveguide system may be made to appear at the other end with any desired power distribution by gradual warping of the normal mode field patterns along the coupler. In general, both variation of the coupling coefficient and phase constants are required. Much wider bands are theoretically possible than with any other distributed type of coupler. This principle may be applied to dielectric waveguides, birefringent media, and waveguides containing ferrite, to obtain both reciprocal and nonreciprocal couplers.

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