Abstracts

Propagation and radiation characteristics of gyrotropic open structures in the presence of sources

P. Baccarelli, C. Di Nallo, F. Frezza, A. Galli and P. Lampariello. "Propagation and radiation characteristics of gyrotropic open structures in the presence of sources." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 655-658.

In this work a comprehensive investigation is carried out for a significant class of open structures with gyrotropic substrates concerning the effective capability to propagate and radiate power in the presence of suitable feeders. In our previous analyses of such structures, various situations were identified where peculiar nonreciprocal propagation and radiation behaviors could occur. On this basis, we wish to emphasize here important aspects of the excitation problem (e.g., the directional features of the radiation, gain and efficiency, etc.), which can affect the practical performance of the components. Thus, by means of new powerful and simple theoretical procedures, it is possible to develop fundamental investigations that provide qualitative and quantitative information in order to use such devices either as waveguiding structures or as leaky-wave type radiators.

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