

Abstracts

The role of complex waves of proper type in radiative effects of nonreciprocal structures

P. Baccarelli, C. Di Nallo, F. Frezza, A. Galli and P. Lamariello. "The role of complex waves of proper type in radiative effects of nonreciprocal structures." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 491-494.

Structures of open type based on gyrotropic substrates have shown interesting nonreciprocal radiation characteristics, recently investigated in terms of leaky waves. This subject is studied further in this work, on the basis of accurate theoretical procedures. Our attention is particularly focused on the identification and the interpretation of original forward/backward beam-scanning properties due to isotropic current sources. The contributions to the radiation of excitable proper (or spectral) leaky waves, until now quite disregarded in such type of open structures, is emphasized and discussed with regard to its physical meaning. This analysis makes possible a simple, complete, and effective interpretation of the radiative features in devices that may find application as unconventional antennas.

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