Abstracts

Dyadic Green's functions for circular waveguides filled with biisotropic media

Eng Leong Tan and Soon Yim Tan. "Dyadic Green's functions for circular waveguides filled with biisotropic media." 1999 Transactions on Microwave Theory and Techniques 47.7 (Jul. 1999, Part I [T-MTT]): 1134-1137.

This paper presents an alternative approach to the method of G/sub m/ for constructing the complete eigenfunction expansions of the dyadic Green's functions for circular waveguides with perfectly conducting walls and filled with homogeneous biisotropic media. The eigenfunction expansions are constructed using the discontinuity relations obtained from Maxwell's dyadic equations treated in the distribution sense. The orthogonality relations for waveguide modes are derived based on the modified reciprocity theorem involving a complementary medium. To illustrate the distinctions between different sets of biisotropic constitutive relations, the dyadic Green's functions are determined for Post-Jaggard and Drude-Born-Federov relations.

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