Abstracts

Resonant frequency and Q factor of axisymmetric composite microwave cavities

A.A. Kishk, D. Kajfez and S. Chebolu. "Resonant frequency and Q factor of axisymmetric composite microwave cavities." 2002 Transactions on Microwave Theory and Techniques 50.10 (Oct. 2002 [T-MTT]): 2287-2293.

Resonant frequency and unloaded Q factor of composite microwave cavities are computed using surface integral equations for axisymmetric objects. The equivalence principle is used to formulate the problem so that the unbounded space Green's function can be utilized. The numerical results are verified experimentally for many samples of conducting cavities and dielectric resonators inside conducting cavities. Also, cases with a sector of the rotational cavity are considered by introducing a conducting corner. The method allows the computation of the stored energy in each dielectric region and the unloaded Q factor.

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