

Comparison of Approximations for Effective Parameters of Artificial Dielectrics (Short Papers)

E.F. Kuester and C.L. Holloway. "Comparison of Approximations for Effective Parameters of Artificial Dielectrics (Short Papers)." 1990 Transactions on Microwave Theory and Techniques 38.11 (Nov. 1990 [T-MTT]): 1752-1755.

Formulas available in the literature for approximating the effective permittivity and permeability of a periodic array of (possibly lossy) dielectric rods of arbitrary cross section are assessed for their accuracy by comparing them with precise numerical values for special forms of the arrays. It is found that while no single formula is capable of very high precision in every case, we can construct good approximate formulas in individual cases as a result of this comparison.

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