Abstracts

Efficient electromagnetic analysis of a doubly infinite array of rectangular apertures

A.W. Mathis and A.F. Peterson. "Efficient electromagnetic analysis of a doubly infinite array of rectangular apertures." 1998 Transactions on Microwave Theory and Techniques 46.1 (Jan. 1998 [T-MTT]): 46-54.

An accurate and rapid method is presented for solving the magnetic field integral equation for the equivalent magnetic currents representing a doubly periodic array of rectangular apertures. Ewald's method is used to accelerate the summations associated with periodic Green's function, allowing the Green's function to be determined to nearly machine precision. Galerkin's method is used to discretize the integral equation with Chebyshev polynomials used as the basis and testing functions. Efficient treatment of the "self-term" singularity is emphasized.

❑ Return to main document.