

Abstracts

Fast algorithm for scattering from planar arrays of conducting patches

L. Gurel and Weng Cho Chew. "Fast algorithm for scattering from planar arrays of conducting patches." 1998 Microwave and Guided Wave Letters 8.4 (Apr. 1998 [MGWL]): 155-157.

A direct (noniterative) algorithm for the solution of the electromagnetic scattering from three-dimensional planar arrays of conducting patches is developed. For an N -unknown problem, the computational complexity of this new solution technique is shown to be $O(N/\log N)$, which is considerably lower than the $O(N^3)$ computational complexity of the conventional direct solution techniques. The advantages of the reduction in the computational complexity is pronounced in the solution of large electromagnetics problems, such as scattering from large and finite arrays of patches, synthesis and analysis of finite-sized frequency selective surfaces (FSSs), and radiation and scattering from large phased-array antennas, to name a few.

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