Abstracts

A Generalized Recursive Algorithm for Wave-Scattering Solutions in Two Dimensions

A generalized recursive algorithm valid for both the Ez and Hz wave scattering of densely packed scatterers in two dimensions is derived. This is unlike previously derived re-cursive algorithms which have been found to be valid only for E/sub z/ polarized waves. In this generalized recursive algorithm, a scatterer is first divided into N subscatterers. The n-subscatterer solution is then used to solve the (n + n')-sub-scatterer solution. The computational complexity of such an algorithm is found to be of $O(N^2)$ in two dimensions, and meanwhile, providing a solution valid for all angles of incidence. This is better than the method of moments with Gaussian elimination which has an O(N/sub 3/) complexity.

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