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研究简报

# 矩形波导中沿E面均匀的介质柱散射特性分析

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摘要
从关于介质极化电流的积分方程出发,用矩量法数值分析了矩形波导中沿E面均匀的任意截面形状和数量的介质柱的散射特性。将介质区域分割成许多矩形小子域,使以矩形波导修正格林函数为核的积分方程能够分区地进行解析处理,从而大大改善了计算精度和速度。计算中考虑了高次模的影响,既提高了计算精度,又提供了所有波型的散射信息。

关键词 矩形波导 均匀介质柱散射 极化电流积分方程 格林函数

分类号

# SCATTERING ANALYSIS OF E-PLANE UNIFORM DIELECTRIC POSTS IN RECTANGULAR WAVEGUIDES

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Abstract
Based on the polarization current integral equation with the modified Green s function as kernel, the scattering properties of the E-plane uniform dielectric posts in rectangular waveguides are numerically analyzed by moment method. These posts are of arbitrary in cross-stction and post-number. The calculation accuracy and speed are remarkably improved by segmentating the dielectric region into many small rectangular cells and applying local analytic integration. The higher-order modes are considered in calculation. It improves the computation accuracy and can provide the scattering information of all excited modes.

Key words Rectangular waveguide Dielectric post scattering polarization current integral equation Green s function

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