Abstracts

TE-Mode Scattering from Two Junctions in H-Plane Waveguide

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An analytic series solution for TE-mode scattering from two junctions in the H-plane waveguide is obtained. A Fourier-transform technique is applied to express the scattered field in the spectral domain in terms of parallel-plate waveguide modes. The boundary conditions are enforced to obtain simultaneous equations for the transmitted field. The simultaneous equations are solved to obtain the transmission and reflection coefficients in simple series forms. Comparisons between our solution and other existing results show excellent agreements. The behaviors of scattering from two junctions are studied in terms of frequency and junction geometry. The obtained analytic solutions are simple series so that they are very efficient for numerical computation.

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