Abstracts

Efficient MM/FE GSMS technique for the CAD of broadband lateral coax feeds in waveguide

R. Beyer and F. Arndt. "Efficient MM/FE GSMS technique for the CAD of broadband lateral coax feeds in waveguide." 2000 MTT-S International Microwave Symposium Digest 00.1 (2000 Vol. I [MWSYM]): 109-112.

An efficient full-wave hybrid mode-matching/finite-element (MM/FE) method is described for the rigorous design of lateral coaxial feeds in rectangular waveguides. Based on the generalized scattering matrix separation (GSMS) technique, only 2D FE standard eigenvalue problems have to be solved to include rigorously also additional post compensation elements or transformer steps within the coax-structure region. Instead of the usual absorbing boundary conditions, homogeneous standard boundary conditions are utilized. The versatility of the CAD method is demonstrated on examples of technical interest, such as broadband feeds and lateral coax fed waveguide filters. The theory is verified by available measured data and reference calculations.

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