Abstracts

A New Finite-Difference Technique for Higher-Order Modes in Arbitrarily Shaped Waveguides

M.J. Beaubien and A. Wexler. "A New Finite-Difference Technique for Higher-Order Modes in Arbitrarily Shaped Waveguides." 1968 G-MTT International Microwave Symposium Digest and Technical Program 68.1 (1968 [MWSYM]): 41-45.

To design new waveguide shapes and to assess their performance in larger systems, propagation constants and field patterns must be found. The following examples are typical of studies requiring knowledge of higher-order modes: a) bandwidth considerations - the upper limit is set by the inception of higher-order modes; b) waveguide discontinuity analysis - a set of modes is required to solve scattering problems; and c) multimode launching and propagation studies - applications include prediction of undesirable linear accelerator resonances, multimode techniques in arial improvement, etc.

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