Abstracts

Three Dimensional Finite Element Analysis of N-Port Waveguide Junctions Using Edge-Elements

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The finite element method is formulated in such a way that the electromagnetic solution of an excited cavity formed from an N-port waveguides junction leads directly and naturally to circuit characteristics of this junction. The use of edge-elements eliminates non physical solutions. The reliability of the solution is assured compared to a penalty method. Accuracy of the method is demonstrated through the presentation of results for a waveguide T-junction while its efficiency is proven through the presentation of results for a case study of a finline step discontinuity.

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