Abstracts

Analysis of 3-D Microwave Resonators Using Covariant-Projection Elements (Short Papers)

J.P. Webb and R. Miniowitz. "Analysis of 3-D Microwave Resonators Using Covariant-Projection Elements (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.11 (Nov. 1991 [T-MTT]): 1895-1899.

Three-dimensional microwave resonators of arbitrary shape can be analyzed with the finite element method using covariant-projection elements, curvilinear bricks which impose only tangential field continuity. The method produces no spurious modes, and works well even when sharp metal edges are present. The matrices involved, though large, are sparse; an appropriate sparse eigenvalue algorithm allows the method to run in modest amounts of memory. Results are presented for a number of test cases, including a rectangular microstrip resonator.

❑ Return to main document.