Abstracts

High-Order Finite Elements for Inhomogeneous Acoustic Guiding Structures

G.O. Stone. "High-Order Finite Elements for Inhomogeneous Acoustic Guiding Structures." 1973 Transactions on Microwave Theory and Techniques 21.8 (Aug. 1973 [T-MTT]): 538-542.

Silvester's high-order finite-element formulation for potential problems is extended to enable the analysis of acoustic wave propagation in lossless isotropic, uniform, and inhomogeneous guiding structures. The formulation allows a large class of problems to be solved using elements of any desired order, with only minimal computer coding. Three examples are cited---one involving a simple homogeneous region having an analytic solution, and two inhomogeneous problems. Good agreement with other methods and with limiting cases is obtained in each case.

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