Abstracts

Semi-Discrete Finite Element Method Analysis of Arbitrary Microstrip Elements--Static Solution

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The Semi-Discrete Finite Element Method is applied to solve the Poisson equation for a class of microstrip structures. This numerical technique is a variant of the conventional Finite Element Method. Its name stems from the fact that finite element approximation is implemented only along two of the Cartesian coordinates, while the solution dependence on the third is handled analytically. When applicable, this method is simpler and more economical then the conventional fully-discrete version. Convergence properties of the solution are examined, and its validity tested for a number of geometries through comparison with other solutions and published data.

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