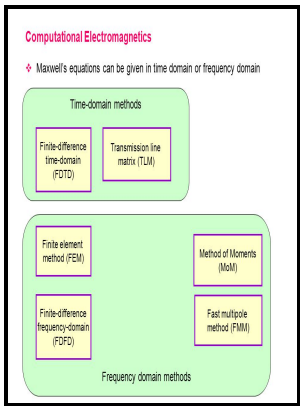
Computational electromagnetics - frequency-domain method of moments

IEEE Press - Computational Electromagnetics



Description: -
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United States -- Politics and government -- 1861-1865
Poetry
General
Integral equations -- Numerical solutions.
Moments method (Statistics)
Electromagnetism -- Mathematical models.Computational electromagnetics - frequency-domain method of moments
-Computational electromagnetics - frequency-domain method of moments
Notes: Includes bibliographical references (p. 464-498) and indexes.
This edition was published in 1992

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Tags: #Computational #electromagnetics

Computational Electromagnetics: Frequency

The first application of the FMM in computational electromagnetics was by Engheta et al. Circuit parameters are computed by either the method of moments MOM or finite element methods FEM. Since it is a time-domain method, solutions can cover a wide frequency range with a single simulation run, provided the time step is small enough to satisfy the for the desired highest frequency.

Numerical Electromagnetics Code NEC2 unofficial home page

Similar to FETD, DGTD employs unstructured mesh and is capable of high-order accuracy if the high-order hierarchical basis function is adopted. Besides providing a direct current solution, it has several other advantages over a MoM analysis for this class of problems since any type of circuit element can be included in a straightforward way with appropriate matrix stamps. Curved geometrical objects are treated more accurately as finite elements , or non-orthogonal grids.

Computational electromagnetics

NEC2 uses a text interface.

Computational Electromagnetics: Frequency

Debye formulation for dispersive materials.

Computational electromagnetics

EMAP is a family of three-dimensional electromagnetic modeling codes developed at the University of Missouri-Rolla and Clemson University. In the PEEC method, the is interpreted as applied to a basic PEEC cell which results in a complete circuit solution for 3D geometries. For example, the RCS calculation and the measurement of a complex metallic object at 35 GHz.

Clemson Vehicular Electronics Laboratory: Free EM Modeling Codes

EM Explorer EMXP is a 3D electromagnetic EM solver for plane wave scattering problems of periodic structures. Elmer includes physical models for problems in fluid dynamics, structural mechanics, electromagnetics, heat transfer and acoustics. The FMM was first introduced by and and is based on the technique.

Numerical Electromagnetics Code NEC2 unofficial home page

There a several free or inexpensive graphical interfaces that do pre- and post-processing of NEC2 models. In solving , the primary challenge is to create an equation which approximates the equation to be studied, but which is , meaning that errors in the input data and intermediate calculations do not accumulate and destroy the meaning of the resulting output.

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