Abstracts

Practical 3-D Contour/Staircase Treatment of Metals in FDTD

J. Anderson, M. Okoniewski and S.S. Stuchly. "Practical 3-D Contour/Staircase Treatment of Metals in FDTD." 1996 Microwave and Guided Wave Letters 6.3 (Mar. 1996 [MGWL]): 146-148.

The standard finite-difference time-domain (FDTD) method incorporates an inaccurate staircase representation of perfect electric conductors. More accurate, contour-type update formulas have been proposed. These approaches suffer from bookkeeping complexity, difficulties in mesh generation, and stability problems. Only simplified special cases have been implemented in three dimensions. A new contour-like FDTD algorithm is presented. Subcell formulas and staircase logic are combined to produce a three-dimensional (3-D) algorithm that is simple, robust, and fully automatic.

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