Abstracts

The efficient implementation of the surface impedance boundary condition in general curvilinear coordinates

J.A. Roden and S.D. Gedney. "The efficient implementation of the surface impedance boundary condition in general curvilinear coordinates." 1999 Transactions on Microwave Theory and Techniques 47.10 (Oct. 1999 [T-MTT]): 1954-1963.

This paper discusses the efficient incorporation of skin-effect losses into the nonorthogonal finite-difference time-domain technique. A survey of previous work is presented and it is shown that the exponential approximations used by previous methods may lead to considerable error when good conductors are modeled using a fine time discretization. Subsequently, an improved exponential approximation is given and applied to various curved conducting waveguide surfaces using the nonorthogonal finite-difference time-domain technique.

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