Numerical Solution of Initial Boundary Value Problems Involving Maxwell’s Equations in Isotropic Media

by

Kane Yee¹, YYY YYY¹ and ZZZ ZZZ²

Department of Electrical and Computer Engineering

McGill University, Montréal, Canada

¹{xxx.xxx, yyy.yyy}@mail.mcgill.ca, ²{zzz.zzz}@mcgill.ca
Abstract – Maxwell’s equations are replaced by a set of finite difference equations. It is shown that if one chooses the field points appropriately, the set of finite difference equations is applicable for a boundary condition involving perfectly conducting surfaces. An example is given of the scattering of an electromagnetic pulse by a perfectly conducting cylinder.
Figure 1: Position of various field components. The $E$-components are in the middle of the edges and the $H$-components are in the center of the faces.

