

Staircasing errors in FDTD at an air-dielectric interface

A. Akyurtlu, D.H. Werner, V. Veremey, D.J. Steich and K. Aydin. "Staircasing errors in FDTD at an air-dielectric interface." 1999 Microwave and Guided Wave Letters 9.11 (Nov. 1999 [MGWL]): 444-446.

An analytical expression is derived for the reflection coefficient of a staircased air/dielectric interface. This expression for the reflection coefficient is then used to determine the attenuation and propagation constants of the wave induced by staircasing. It is demonstrated here that the errors due to staircasing increase as the relative dielectric permittivity is increased and converges to the results for an air-PEC interface.

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