# Abstracts

## The determination of the effective radius of a filamentary source in the FDTD mesh

*G. Waldschmidt and A. Taflove. "The determination of the effective radius of a filamentary source in the FDTD mesh." 2000 Microwave and Guided Wave Letters 10.6 (Jun. 2000 [MGWL]): 217-219.*

This paper proposes a rigorous method for determining the effective radius, r/sub eff/, of a single axial field component, E/sub x/ or H/sub x/, in a two-dimensional (2-D) TM/sub x/ or TE/sub x/ FDTD grid, respectively. The method is based upon matching FDTD results for a filamentary field source with the analytical Green's function in two dimensions. We find that r/sub eff//spl ap/0.2 grid cells over a wide range of grid resolutions. Further, our findings vividly demonstrate the nondissipative nature of the Yee algorithm even for very coarse grid resolutions.

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