Abstracts

Fundamental gridding related dispersion effects in multiresolution time domain schemes (2001 Vol. II [MWSYM])

C.D. Sarris and L.P.B. Katehi. "Fundamental gridding related dispersion effects in multiresolution time domain schemes (2001 Vol. II [MWSYM])." 2001 MTT-S International Microwave Symposium Digest 01.2 (2001 Vol. II [MWSYM]): 749-752 vol.2.

The effect of electric and magnetic node arrangement on the dispersion characteristics of the multiresolution time domain technique is investigated in this paper. It is first noted that by multiresolution analysis principles, introducing one wavelet level refines the resolution of a numerical scheme based on scaling functions only, by a factor of two. However, the dispersion analysis of recently formulated MRTD schemes shows that this is not always the case. The apparent contradiction is resolved by indicating that MRTD does achieve its predicted dispersion performance under certain meshing conditions that are outlined here.

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