Abstracts

Multiresolution time-domain algorithm using CDF biorthogonal wavelets

T. Dogaru and L. Carin. "Multiresolution time-domain algorithm using CDF biorthogonal wavelets." 2001 Transactions on Microwave Theory and Techniques 49.5 (May 2001 [T-MTT]): 902-912.

A new approach to the multiresolution time-domain (MRTD) algorithm is presented in this paper by introducing a field expansion in terms of biorthogonal scaling and wavelet functions. Particular focus is placed on the Cohen-Daubechies-Feauveau (CDF) biorthogonal-wavelet class, although the methodology is appropriate for general biorthogonal wavelets. The computational efficiency and numerical dispersion of the MRTD algorithm are addressed, considering several CDF biorthogonal wavelets, as well as other wavelet families. The advantages of the biorthogonal MRTD method are presented, with emphasis on numerical issues.

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