Abstracts

Application of biorthogonal interpolating wavelets to the Galerkin scheme of time dependent Maxwell's equations

M. Fujii and W.J.R. Hoefer. "Application of biorthogonal interpolating wavelets to the Galerkin scheme of time dependent Maxwell's equations." 2001 Microwave and Wireless Components Letters 11.1 (Jan. 2001 [MWCL]): 22-24.

A family of biorthogonal interpolating wavelets has been applied to time-domain electromagnetic field modeling through the wavelet-Galerkin scheme. The scaling functions are the Deslauriers-Dubuc interpolating functions and the wavelets are the shifted and contracted version of the scaling functions. This set of bases yields a simple algorithm for the solution of Maxwell's equations in time domain due to their interpolation properties. The derivation of the algorithm is presented in this paper, followed by a series of numerical verifications on some resonant structures.

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