Abstracts

3D subgrid technique for the finite difference method in the frequency domain

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A new, efficient finite difference frequency domain (FD-FD) subgrid technique is introduced. Based on a robust direct orthogonalization of the FD-FD grid, the method does not require any additional interpolation or correction terms. This yields a significant reduction in both CPU time and storage requirements as compared with the usual graded mesh techniques. The rigorous S-parameter calculation of 3D dielectric or metallic post element examples in rectangular waveguides demonstrates the versatility of the method. Comparisons with measurements and calculated reference values verify the presented technique and show its high dynamic range.

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