Abstracts

Direct Derivations of TLM Symmetrical Condensed Node and Hybrid Symmetrical Condensed Node from Maxwell's Equations Using Centered Differencing and Averaging

This paper presented direct derivations of the TLM symmetrical condensed node (SCN) and hybrid symmetrical condensed node (HSCN) from Maxwell's equations by using centered dlfferencing and averaging. Direct correspondence between the TLM and finite difference method is established. The node scattering matrices and field expressions are given for the general case with graded mesh and anisotropic materials including both electric and magnetic losses. It is found that the TLM SCN and HSCN always have 2nd-order accuracy regardless of a uniform or graded mesh discretization of the space.

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