

Abstracts

MRTD Modeling of Nonlinear Pulse Propagation

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The nonlinear pulse propagation in optical fiber filters is modeled by a multiresolution time domain (MRTD) scheme based on the expansion in scaling functions. As for the case of the linear modeling of microwave structures, the MRTD scheme exhibits advantages over Yee's FDTD scheme, since it allows to reduce the mesh size by a factor of five per dimension. This is demonstrated by modeling the pulse compression with both MRTD and FDTD schemes.

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