Abstracts

Operator Factorization of Scalar Wave Equation in Frequency-Domian

Z.-N. Lu. "Operator Factorization of Scalar Wave Equation in Frequency-Domian." 1992 Microwave and Guided Wave Letters 2.11 (Nov. 1992 [MGWL]): 459-460.

The partial differential operator factorization of the scalar wave equation in the time-domain were derived by Engquist and Majda. A set of absorbing boundary conditions were provided by using these equations. An alternative way to derive these equations in the frequency-domain is shown. The limitation and accuracy of the resulting one-way wave equations may be easier to see from this derivation. Recently, the finite-difference vector beam propagation method has been developed. The possibility of the similar finite-difference method based on the one-way wave equations derived by the operator factorization is also discussed.

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