Unconditionally stable Crank-Nicolson wave-equation PML formulations for truncating FDTD domains

Article *in* Electrical Engineering 89(2):89-93 · December 2006 *with* 37 Reads
DOI: 10.1007/s00202-005-0326-y

Abstract
Efficient, accurate and unconditionally stable perfectly matched layer (PML) formulations are presented for truncating Finite Difference Time Domain grids. The formulations are based on incorporating the Crank-Nicolson scheme into the modified Helmholtz wave-equation derived in the PML region. Numerical example carried out in one-dimension is included to validate the proposed formulations.