Abstracts

An unconditionally stable 3-D ADI-MRTD method free of the CFL stability condition

Zhizhang Chen and Jiazong Zhang. "An unconditionally stable 3-D ADI-MRTD method free of the CFL stability condition." 2001 Microwave and Wireless Components Letters 11.8 (Aug. 2001 [MWCL]): 349-351.

In this paper, an alternating direction implicit (ADI) technique is applied to the recently developed multiresolution time-domain (MRTD) method, resulting in an unconditionally stable ADI-MRTD scheme free of the Courant-Friedich-Lecy (CFL) stability condition. The unconditional stability is theoretically proved, and preliminary numerical results are presented to validate the scheme. Because the scheme is now free of the stability condition, its time step is determined only by modeling accuracy. The price for having the unconditional stability is, however, that the required computation memory becomes almost twice of that for the original MRTD.

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