Abstracts

The perfectly matched layer as lateral boundary in finite-difference transmission-line analysis (Dec. 2000 [T-MTT])

T. Tischler and W. Heinrich. "The perfectly matched layer as lateral boundary in finite-difference transmission-line analysis (Dec. 2000 [T-MTT])." 2000 Transactions on Microwave Theory and Techniques 48.12 (Dec. 2000 [T-MTT] (Special Issue on 2000 International Microwave Symposium)): 2249-2253.

Using a perfectly matched layer (PML) as lateral boundary in waveguide analysis introduces artificial modes and other unexpected effects. This paper presents results of a finite-difference frequency-domain approach and an analytical investigation of the PML's capability to simulate the lateral open space, including an accuracy estimation. A criterion how to detect the desired modes out of the mode spectrum is also given. The findings are verified for a coplanar waveguide radiating into the substrate.

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