# Abstracts

## Numerical implementations of PML boundary conditions in the TLM-based SCN FDTD grid

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The recently developed perfectly matched layer (PML) absorbing scheme and its improvement, the modified PML (MPML), have been shown to be very effective in absorbing numerical electromagnetic (EM) waves in the conventional finite-difference time-domain (FDTD) method. However, the implementation of PML in the transmission-line-matrix (TLM) method is not straightforward. An alternative and easy way is to use the recently introduced TLM-based symmetrical condensed node (SCN) FDTD method. In this paper, the implementation of the PML and MPML schemes in the TLM-based SCN FDTD method and the extension of the MPML to three dimensions are presented, The computation amount is found to increase by a maximum of 1/3, and the MPML is shown to be effective and efficient in absorbing both the evanescent and propagating modes.

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