# Abstracts

## Generalized Perfectly Matched Layer for the Absorption of Propagating and Evanescent Waves in Lossless and Lossy Media

*J. Fang and Z. Wu. "Generalized Perfectly Matched Layer for the Absorption of Propagating and Evanescent Waves in Lossless and Lossy Media." 1996 Transactions on Microwave Theory and Techniques 44.12 (Dec. 1996, Part I [T-MTT]): 2216-2222.*

The perfectly matched layer (PML), proposed by Berenger, has been proved very effective in absorbing propagating waves in lossless media. However, it has been found that the original construction of PML cannot effectively absorb evanescent waves. Also, significant reflection can appear as PML is applied to terminate lossy media. This paper describes a generalized perfectly matched layer (GPML) that extends the original PML to absorb both propagating and evanescent waves in lossless and lossy media. The generalized perfectly matched layer is derived from the Maxwell's equations in stretched coordinates and can be easily implemented in finite-difference time-domain (FDTD) programs. This paper also presents proper selection of parameters in the numerical implementation of the generalized perfectly matched layer to achieve good performance in absorption.

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