

## **ABSTRACT**

*Simulation of two-dimensional electromagnetic wave propagation using the Finite Difference Time Domain (FDTD) method requires artificial boundaries that can effectively absorb waves to avoid disturbing reflections. This study aims to analyze the differences in the effectiveness of the Perfectly Matched Layer (PML), in absorbing waves from Gaussian and Sinusoidal sources by varying the conductivity value of the PML. The method used is a numerical simulation based on FDTD, where the simulation domain applies PML with various conductivity values (2.0 S/m, 4.0 S/m, and 6.0 S/m). The simulation results show that for Gaussian sources it is effective to use a conductivity of 6.0 S/m and for sinusoidal sources it is effective at a conductivity of 6.0 S/m. This study has proven to be able to simulate electromagnetic wave propagation using the FDTD method and determine its characteristics.*

**Keywords :** *Finite Difference Time Domain, Gaussian Source, Sinusoidal Source, Perfectly Matched Layer.*