

ABSTRACT

Indonesia is a sovereign country. Security is the main thing and very crucial. It is written in the Law of the Republic of Indonesia concern about the exploration of natural resources on land, and must be protected by national interests and national security. To protect national security from defense or missile protection, the technology that supports this protection is radar. Radar capable of detecting the presence of missiles.

The method used for radar is to see changes in the reception signal from an object with electromagnetic waves that have linear polatization. Linear polarization is used in two directions, namely vertical polarization and horizontal polarization. Changes in missile orientation and polarization can affect the value of the reflected wave received by the radar.

In this experiment, it can be concluded that the determination of the polarization of electromagnetic waves affects the magnitude of the reflected wave at each missile orientation, this is indicated by changes in the peak-to-peak amplitude value which shows an increase and decrease in the peak-to-peak amplitude value in a certain orientation. Changes in orientation make the signal received by the receiving antenna smaller. Changes in the orientation of the missile along the trajectory provide a pattern of received signal levels and can then be used to detect the missile's trajectory. Early detection of missiles can help the process of deterrence and evacuation process in the area.

Keywords: *Radar, Antenna, Vertical Polarization, Horizontal Polarization.*