

ABSTRACT

Research in the field of radar technology is currently being done in Indonesia. One of them is the signal processing subsystem which is the main function of radar technology. However, the signal processing subsystem is still rarely carried out in-depth research. Many detection problems can interfere with the performance of the radar, for example false alarms.

The problem of false alarms can be overcome by the Constant False Alarm Rate (CFAR) algorithm. The CFAR algorithm refers to the general form of the adaptive algorithm used on radar systems to detect background noise that cannot be avoided. So the false alarm can be overcome to be constant and the resources on the radar will not be taken quite a lot. This simulation has two scenarios, namely SOCA-CFAR and TM-CFAR, with each scenario using the parameters $PFA = 10^{-1}$ to 10^{-4} , Training Cell = 20, Guard Cell = 2, and SNR = 10.77 dB, 13.24 dB, 14.68 dB, 15.77dB.

The value of the False Alarm Probability (PFA) used depends on the number of tests or window data that results from the detection process. From the SOCA-CFAR and TM-CFAR simulations it can be concluded that TM-CFAR produces a smaller PFA than the SOCA-CFAR.

Keywords: Radar, CFAR, SOCA-CFAR, TM-CFAR, False Alarm, Threshold, Noise.