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THE EFFECT OF DIFFERENT CROSSING POINT TO GOUND TARGET IN FORWARD SCATTERING RADAR NETWORK

SITI NORIDA HASHIM

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ABSTRACT

Forward scatter provide special type of bistatic radar known as Forward Scattering Radar (FSR) to detect targets in short range that is transmitter-receiver baseline. The detection of target within sensing area on the baseline by influence by different characteristic of the moving target trajectory in radar system.This project presents the effect of the different crossing point to the target spectra in FSR network. The analysis and normalization of system performance is simulated using MATLAB software. The obtained results show the similarity and stability of power spectra when ground target crossing baseline at different point. Normalization of target spectra have reduce the dissimilarity between the spectra were also presented

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CHAPTER ONE

INTRODUCTION

1.1 PROJECT BACKGROUND

The RADAR is an acronym for Radio Detection and Ranging[1]. Radar is electromagnetic (EM)equipment that capable of gathering information to detect features, range, azimuth and elevation angles, radar cross section and speedof object located at remote distances from the sensing device.

Radar is a way to detect the direction of the target and observing the reflection uses electromagnetic (EM) energy pulses. If the target presence, all the information including the pointing angles of the antenna and the magnitude of the backscatters power[2, 3] will then be analyzed to determine above parameter.

There are different types of radar system based ontransmitter-receiver topology as shown in Figure 1.1. In monostatic radar, transmitter and receiver are spatially combined in single antenna. The bistatic radar comprises of single transmitting antenna and single receiving antenna spatiallyseparated by a distance is in general more complex than monostatic radar[4-7]. On the other hand, multistatic radar designed with more than one transmitter or receiver separated offer extend capabilities and information [8-10]. In essence the information obtained combined with some level of data fusion. The multisite radar is radar system which has several separated transmitting and receiving antenna introduces more complex system but enhance information extraction[11].