THE EFFECT OF DIFFERENT CROSSING POINTS TO THE STABILITY AND SIMILARITY OF TARGET SPECTRA IN FORWARD SCATTERING MICRO RADAR (FSMR) NETWORK

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Abstract

Forward Scattering Radar (FSR) is a unique case of bistatic radar (BR), happened when the angle of the target form transmitter to receiver baseline called bistatic angle, β is close to 180 degrees. The desired radar signal is formed via the shadowing of the direct (transmitter-to-receiver) signal by the target body. The use of distributed FSR sensors network that can offers number of interesting features such as ability to detect small and stealth target make it exciting things to learn about. This thesis presents the investigation on the effect of different crossing points of target spectra in Forward Scattering Micro Radar (FSMR) for ground target detection. Several previous works focused on detection and recognition for air target only. By not considering the 'clutter' and any other environmental effect, the target modeling and simulation signals for this project have been executed using MATLAB Software version 7.11(R2010b) to evaluate the performance of ground based Forward Scattering Radar (FSR) with omnidirectional antennas that operates at a low frequency bands (VHF and UHF). The obtained results show the effect of different crossing points to the target spectra in forward scattering micro sensor network.

Table of Contents