

PERFORMANCE EVALUATION OF NON-UNIFORM PRF RADAR SIGNALS USING MOGA

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ABSTRACT

In this paper a novel method for solving the multi-function optimization problems have been proposed. Radar is mainly used to detect the targets in different environments by analyzing the echo signal from the target. One method of distinguishing multiple-time-around echoes from unambiguous echoes is to operate with a varying pulse repetition frequency. The different pulse repetition frequencies also allow eliminating the blind speeds in finding the moving targets information. The use of more than one PRF offers additional flexibility in the design of MTI radars. The detection level of the target can be decided by the performance factors called merit factor and discrimination factors. The performance factors are varying with the variation of PRI sequence. Hence we are generating the non-uniform PRI sequence to maximize both the performance factors using multi objective genetic algorithm optimization technique.

KEYWORDS: PRF, PCW, Merit Factor, Discrimination Factor, GA, MOGA