THE RESEARCH OF RADAR MULTIPLE TARGET MANEUVERING ESTIMATE AND ADAPTIVE SYSTEMS

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ABSTRACT

AN IMPROVED ALGORITHM FOR TRACKING MULTIPLE MANEUVE- RING TARGETS USING A NEW APPROACH HAS BEEN DEVELOPED IN THIS THESIS. THIS ALGORITHM IS IMPLEMENTED WITH AN ADAPTIVE FILTER CONSISTING OF A DATA ASSOCIATION TECHNIQUE DENOTED 1-STEP CONDITIONAL MAXIMUM LIKELIHOOD TOGETHER WITH A BANK OF KALMAN FILTERS AS AN ADAPTIVE MANEUVERING COMPENSATOR. VIA THIS APPROACH, BOTH DATA ASSOCIATION AND TARGET MANEUV- ERING PROBLEMS CAN BE SOLVED SIMULTANEOUSLY. MOREOVER , IN ORDER TO VERIFY SUCH A TRACKING SYSTEM IS REALLY IMPROVED. DETAILED SIMULATIONS OF THE MULTI-TARGET TRACKING USING SEVERAL TRACKING ALGORITHMS FOR MANY SITUATIONS ARE DEVELOPED. COMPUTER SIMULATION RESULTS INDICATE THAT THIS APPROACH SUCCESSFULLY TRACKS MULTIPLE TARGETS AND HAVE BETTER PERFORMANCE ALSO.

Keywords : 無

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