

ABSTRACT

Multiple-target tracking (MTT) is a prerequisite step for radar surveillance systems. Data association is the key technique in a radar multiple-target tracking system. A new approach of data association denoted Competitive Hopfield Neural Network and using Kalman filter-based sensor fusion algorithm is investigated in this dissertation. In order to combine different attributes, a fusion algorithm is developed to match between radar measurements and existing target tracks. When target maneuvering problems are occurred, an adaptive maneuvering estimator is applied. Based on the computation algorithm, we convince that this approach can successfully solve the multiple-target tracking problems and have better performance.

Keywords : Data association technique、Competitive Hopfield Neural Network、Kalman filter-based tracking algorithm

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