

# The Analysis of Adaptive Capability and Stability for Radar Systems

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## ABSTRACT

Multiple-target tracking algorithm plays an important role in a radar system. An algorithm used to analyze the multiple maneuvering tracking problems for a radar system is proposed in this thesis. With the developed algorithm, the system will improve the tracking accuracy and reliability of radar surveillance. In this thesis, a computation logic as an adaptive maneuvering compensator is applied to solve both data association and target maneuvering problems simultaneously. A computer simulation algorithm for analyzing the adaptive capability and stability of multiple-target tracking problems is conducted. Computer simulation results indicate that this approach successfully tracks multiple targets in a dynamic system and has good performance.

Keywords : Multiple-target tracking algorithm ; adaptive maneuvering compensator ; adaptive capability and stability

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