The Research of Applying Competitive Hopfield Neural Networks to Circle Track Tracking

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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 Competitive Hopfield Neural Networks 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. Key Words：Data association, Competitive Hopfield Neural Network

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