

## **Applying image processing technique to radar target tracking problems**

Wang, Kuen-Cheng; Chung, Yi-Nung;  
Hsu, Chao-Hsing; Chen, Tsair-Rong

### **Abstract**

Data association plays an important role in a radar multiple-target tracking (MTT) system. An approach for data association using image information is investigated in this paper. An algorithm applying the Competitive Hopfield Neural Network (CHNN) is developed to match between radar measurements and existing target tracks. If target maneuvering situations are occurred, an adaptive maneuvering estimator denoted dynamic multiple-model estimator is applied to solve the estimation problems. According to the simulation results, this algorithm can solve the multiple-target tracking problems successfully.

**Key words:** Competitive Hopfield neural network;  
Data association; Image information