Performance comparison between applying the PHD filter and kalman filter to WSN

簡佑興、陳雍宗

E-mail: 319738@mail.dyu.edu.tw

ABSTRACT

In this thesis, the PHD (probability hypothesis density) filter and the Kalman filter are adopted as the two algorithms for tracking the maneuvering objects that deployed in the WSNs (wireless sensor networks) environments. The tracked performance with the RMSE (root mean square error) are compared each other and they are simulated by the computer programs. The superior performance can be obtained by the PHD filter is algorithm, however, the simple implementation of Kalman filter is outperform than PHD filter. For the purpose of gaining better performance to track maneuvering objects, the results from this thesis are good reference for the designing in deployment of the mobile sensors within WSNs.

Keywords : wireless sensor networks(WSNs)；probability hypothesis density(PHD)filter；Kalman filter；root mean square error(RMSE).

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