

博士论坛

## 多传感器信息融合的目标跟踪研究

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收稿日期 2009-3-12 修回日期 2009-6-10 网络版发布日期 2009-9-8 接受日期

**摘要** 为了提高红外与毫米波雷达双模制导系统的目标跟踪精度, 提出了将UKF用于红外和毫米波雷达的数据处理, 采用分布式融合结构, 通过对两传感器的滤波协方差矩阵的相关估计, 将滤波协方差矩阵和状态估计进行融合。该方法应用于红外与毫米波雷达双模制导系统的目标跟踪仿真, 仿真结果表明: 与单传感器系统相比, 该方法提高了制导系统的目标跟踪精度。

**关键词** [双模制导](#) [信息融合](#) [无迹卡尔曼滤波](#) [目标跟踪](#)

**分类号** [TP212](#)

## Multisensor information fusion for target tracking

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### Abstract

A target tracking method based on data fusion of infrared and radar is proposed to improve tracking precision. Unscented Kalman filter (UKF) and track-to-track algorithms are applied to process data on distributed fusion architectures. The method combines the advantages of UKF and track-to-track algorithms. The cross-covariances of the two sensors are used to estimate overall covariance and states. The overall estimation is obtained by the track-to-track fusion algorithm for the optimal combination of two correlated estimates. The proposed method is applied to simulating target tracking of infrared and radar. The simulation results show the proposed method has advantages in higher precision.

**Key words** [dual-model guidance](#) [information fusion](#) [unscented Kalman filter](#) [target tracking](#)

DOI: 10.3778/j.issn.1002-8331.2009.25.003

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