基于航弹的动基座传递对准研究 (PDF)

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Title: Research of Transfer Alignment and Experiment in Flight for Air Ammunition

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摘要： 在几种传递对准方法和航弹传递对准特点的基础上，提出采用速度+姿态传递对准方案。根据实际情况合理简化传递对准数学模型，采用改进的卡尔曼滤波方法分别对速度匹配和姿态匹配子系统误差估计，同时还对陀螺漂移进行估计，然后采用联邦滤波算法对子系统的公共状态进行信息融合得到全局估计，提高系统的计算能力和可靠性。仿真试验表明姿态误差在$20'$以下，速度误差在0 $1m/s$以下，该方法适合航弹传递对准要求。

Abstract: On the base of several kinds of transfer alignment methods and characteristics of air ammunition, the velocity plus attitude matching method was proposed. According to actual circumstance, the mathematical model of transfer alignment was simplified reasonably, and the errors of attitude and velocity were estimated by improved Kalman filter, and gyro drift was estimated. Then, the federal filter was adopted for information fusion global estimation, and calculation ability and system credibility improvement. The experiment and simulation show attitude and velocity errors are respectively less than $20'$ and 0 $1m/s$, and the method fits for transfer alignment mounted air ammunition.

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