

## 控制理论与实践

### 基于离心机测试的惯导平台误差系数辨识研究

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#### 摘要:

为解决惯导平台误差模型辨识中与加速度高阶项有关的误差系数的辨识问题, 提出一种基于离心机测试的惯导平台误差系数辨识的方案。通过分析惯导平台在过载状况下的受力, 给出惯导平台在离心机上的安装定向及其误差系数的辨识方案。按该方案利用扩展卡尔曼滤波估计算法在某型惯导平台上进行误差系数辨识实验。结果表明, 此方案可有效地辨识出惯导平台误差型中与加速度高阶项有关的误差系数, 且精度较高。

关键词: 惯导平台 离心机测试 模型辨识 误差

### Research on error model identification of inertial navigation platform based on centrifuge testing

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#### Abstract:

In order to identify the error model coefficients proportional to higher-order acceleration in error model identification of inertial navigation platform, an identification scheme based on centrifuge testing is developed. By analyzing the force on inertial navigation platform under the overload situation, the installing of inertial navigation platform on the centrifuge and the identification scheme are given. According to the scheme, an identification experiment using extended Kalman filtering is followed. The results show that this method is valid for the identification of the error model coefficients which are proportional to higher-order acceleration, furthermore, it has a high identification accuracy.

Keywords: inertial navigation platform centrifuge test model identification error

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