

## 六维力传感器静态解耦算法及静态标定的研究

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摘要:

耦合误差严重影响着六维力传感器的精度, 标定试验的准确性对提高六维力传感器的精度也是必不可少的。本文针对一种基于耦合误差和分段拟合建模的六维力传感器解耦算法。用十字梁结构的传感器进行标定试验, 将得到的标定数据用于耦合误差和分段拟合的静态解耦算法性能的优越性。

关键词: 六维力传感器; 静态解耦算法; 标定; 分段拟合

## The Study on Static Decoupling Algorithm for Six-axis Force Sensor and Static

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**Abstract:**

The static coupling to six-axis force sensor is a key factor to its precision. The accuracy of the calibration test is also indispensable for the six-axis force sensor. This paper, against the difference of sensor output voltage of positive and negative direction fitting function, proposes a six-axis force sensor based on coupling error and piecewise fitting model. A large number calibration data obtained in calibration test are used to verify the decoupling algorithm. Finally, the calibration test results of this static decoupling algorithm verify the superior performance of the static decoupling algorithm.

**Keywords:** six-axis force sensor; static decoupling algorithm; calibration; piecewise fitting

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