

## 环形激光陀螺的零偏热效应补偿模型

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摘要：

热效应对激光陀螺零偏的影响非常明显且难以精确建模。根据对环形激光陀螺的大量温度试验的数据，分析了温度变化、温度梯度与温变速率对陀螺零偏漂移影响的规律，进而提出了一种适用于工程应用的环形激光陀螺的零偏热效应补偿方法。经试验验证，此模型能在一定程度上改善热效应对环形激光陀螺零偏稳定性的影响，为建立最后的误差补偿模型，进一步提高环形激光陀螺的精度打下基础。

关键词：环形激光陀螺；零偏漂移模型；零偏补偿

## The Compensation Method for Thermal Bias of Ring Laser Gyro

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**Abstract:**

Thermal effect has great influence on the bias drift of laser gyro, which is too difficult to found a model precisely. Based on lots of environmental temperature experiments of the ring laser gyro, analysis of the relationship between temperature change, temperature gradient, temperature change rate and bias drift, a compensation method for thermal bias of ring laser gyro for engineering application is proposed. The experimental results show that this model can improve the stability of thermal bias of ring laser gyro in order to found an error compensation model in conclusion and further improve the precision of ring laser gyro.

**Keywords:** Ring Laser Gyro; Bias drift modeling; Bias Compensation

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