

圆柱壳体振动陀螺谐振子的品质因数研究

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基金项目：自然科学基金

摘要：

品质因数是衡量陀螺振动特性的重要指标，它决定了陀螺的检测灵敏度。本文首先从理论上分析了影响圆柱壳体振动陀螺谐振子品质因数的主要因素。然后针对各种因素进行一系列的实验研究，包括谐振子的材料、形状以及尺寸等因素对于陀螺谐振子品质因数的影响。研究表明，谐振子的品质因数在很大程度上决定于谐振子材料、谐振环的形状及外径尺寸。

关键词：品质因数；圆柱壳体振动陀螺；谐振子；能量损耗

Research on Quality Factor of Resonator for Cylinder Shell Vibrating Gyroscope

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Abstract:

Quality factor is an important index judging a gyroscope's dynamics and an important parameter contributing to a gyroscope's sensitivity. The influence factors of quality factor of resonator for cylinder shell vibrating gyroscope are investigated theoretically. And the various experiments on the influence factors are performed. The experimental researches are conducted to study the factors which influence the quality factor of the resonator, including the material, the size and the shape. It is shown that the material, the shape and diameter of the resonator are the crucial influence factors of the quality factor.

Keywords: Quality factor; Cylinder shell vibrating gyroscope; Resonator; Energy loss

投稿时间：2011-05-23

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