感应式磁传感器标定磁场处理方法研究

作　者：万云霞, 王言章, 程德福

单　位：吉林大学

摘　要：

在感应式磁传感器灵敏度测试中将通电长直螺线管内部磁场近似为均匀恒定磁场的假设，导致实测灵敏度曲线值低于真实值。对通电长直螺线管内部磁场分布的非均匀性进行理论论证与仿真实验，提出采用均值法对标定磁场的不均匀性进行处理。将处理前后的实测灵敏度曲线与理论曲线进行对比后得出结论：处理后的曲线更接近理论曲线。

关键词： 灵敏度 通电螺线管 非均匀性 均值法

Research on the Processing Method of Calibration Magnetic Field for Inductive Magnetic Sensor

Author's Name:

Institution:

Abstract:

The magnetic field produced by the electriferous solenoid was regarded as even magnetic field in the sensitivity test of inductive magnetic sensor. But this presupposition will bring on a result that the metrical sensitivity is less than the real sensitivity. The non-uniformity of the magnetic field produced by the electriferous solenoid has been analyzed through the theoretics and the emulation experimentation. Then the mean method was put forward to process the non-uniformity. Compared the metrical sensitivity with the theoretical sensitivity, the conclusion was given: the error between the metrical sensitivity processed by mean method and the theoretics sensitivity is less than that of the un-processed metrical sensitivity.

Keywords: sensitivity; electriferous solenoid; non-uniformity; mean method

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