

基于广义最小二乘法加速度传感器的动态建模

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摘要:

针对数学模型在动态校准实验数据处理中的重要地位, 结合Hopkinson杆对加速度传感器测试系统动态校准所得实验数据, 介绍了一种基于广义最小二乘法的动态数学模型建立方法。并利用Matlab/Simulink模块进行了仿真实验, 由仿真结果表明该时间域数据处理方法具有简洁性、准确性的特点, 特别适合于动态校准中建立差分方程模型。

关键词: 加速度传感器; 动态校准; 广义最小二乘法; Matlab/Simulink

Dynamic modeling of acceleration sensor based on generalized least square method

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Abstract:

For the important role of mathematical model in data processing of dynamic calibration and combining the experimental data of dynamically calibrating acceleration sensor test system based on the Hopkinson bar, introduce a generalized least square method of dynamic model. And use Matlab/Simulink simulation module to simulate and verify the result, the simulation results show that this time domain data-processing method is provided with the characteristics of simplicity and accuracy, it quite suitable for the establishment of differential equation model in dynamic calibration process.

Keywords: acceleration sensor; dynamic calibration; generalized least square method; Matlab/Simulink

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