

Vibration Measurement on Steering Wheel Maneuvering

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MECH 875

Objective:

To build a cost-effective wireless accelerometer/gyroscope that can measure the vibrations and angles of the steering wheel during driving performance for different applications.

Approach:

It will consist of building a device with Arduino Sensors to record accelerations, and angles of the steering wheel wirelessly. Once the device is built, the data recorded will be used to characterize the steering wheel maneuvering from the vibrations creating due to the suspension.

Expected Outcomes:

Data is expected to help characterize different characteristics of vibrations and actual steering angle movement. At the end, this device is planned to be used in crash-worthiness applications. For that reason, the use of something cheap like Arduino sensors is planned. With this device, the main outcome will be to understand steering wheel behavior during crashes while being able to differentiate angle changes from vibrations caused due to both suspension and impacts.

Side Note:

I would like to point out that the end-goal of my project mentions crash-testing, but I am implying that as a use in the future (like months in the future), and for this project I am only attempting to do driving in different surfaces with no crash on it.