

## EXPLORATION IDEA PROFILE: Sensor Calibration Techniques

### EXPLORATION IDEA

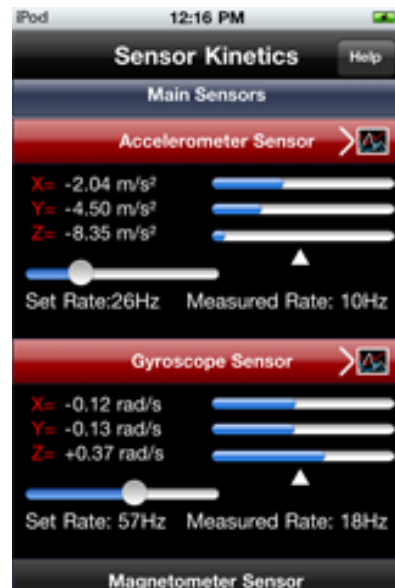
Smartphone sensors are capable of measuring light intensity, magnetism, acceleration, temperature, and many other physical variables through a variety of 'apps'. This project critically assesses how well these sensors perform compared to professional measurement technology, so that ubiquitous smartphone sensor technology can be used with confidence for classroom and citizen science applications where expensive, professional technology is not practical.

### TARGET AUDIENCE(S)

This could impact K–12 science classes, physics and astronomy undergraduates. It is specifically targeted at developers of formal Citizen Science research projects as a means of assessing whether ordinary smartphone sensors can be adapted for quantitative data-gathering projects.

### POTENTIAL IMPACT

The proper calibration of smartphone sensors across a variety of popular platforms, together with available low-cost apps can open up the possibilities for integrating them into new citizen science projects in earth and space science, engineering, and photography, to name a few possibilities.



### RELATED IDEAS/INNOVATIONS

- Develop publications on specific applications, such as detecting magnetic storms (magnetometer) and earth rotation (accelerometer)
- Develop Smartphone Experimenter Guide and Smartphone Math Guide for ISTE

### MATERIALS/EQUIPMENT

- Various smartphone models to compare platform variability

### EXPLORATION IDEA TEAM

- **Team Lead:** Dr. Sten Odenwald
- **Affiliated Contributors:** Sherry Bosch (ISTE), Ariel Zych (Science Friday), Cait Bailey (Anecdota.org)

## EXPLORATION IDEA PROFILE:

# Sensor Calibration Techniques

*Exploration Idea Profiles* are developed through a guided process involving a step-by-step guide/worksheet where participants are invited to consider additional topics that include:

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- Connections to other technologies
- Connections to existing information/research
- Connections to educational standards
- Connections to existing activities/projects
- Universal design
- Next steps

### ***HOW TO CONNECT***

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