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Motion Sensors in Introductory Physics Laboratory and beyond.

PONN MAHESWARANATHAN, Winthrop University — Motion sensors are commonly used to collect data in a typical computer-based introductory physics laboratory. It is part of the group of sensors that comes with an initial purchase of an interface. It is an important piece of equipment for the first year physics curriculum. It is used in position, velocity, and acceleration experiments as well as in momentum conservation, impulse-momentum theorem, and simple harmonic motion. In this paper its use will be expanded to few more experiments and lecture demonstrations pointing out its limitations and some of the pitfalls. A review of the websites that deal with motion sensors and computer assisted experiments will also be presented. In addition, their use in alarm and automation systems and surveillance technology will be introduced as an extrapolation to real world applications.

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