

Abstract Submitted
for the DAMOP15 Meeting of
The American Physical Society

Arduino-based laboratory instruments for an undergraduate laser cooling experiment TIMOTHY IRELAND, GAGE TIBER, ROBERT W.A. BROOKE, JULIE M. GILLIS, CHRISTOPHER A. ZACCAGNINI, THEODORE A. CORCOVILOS, Duquesne University — Arduino is an inexpensive open-source microcontroller platform designed for quick development turn-around and easy interfacing, making it ideal for novice programmers and instrument designers. Based on Atmel ATMEGA microcontroller chips, the Arduino boards are programmed with standard C/C++ code and contain sufficient inputs and outputs (both digital and analog) for basic data acquisition and device control. Here we present home-built Arduino-based instruments commonly used in laser-cooling experiments, such as a wavelength meter and temperature controller. We describe the design and performance of these instruments.

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Date submitted: 30 Jan 2015

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