

Abstract Submitted
for the SES16 Meeting of
The American Physical Society

Investigations of Low-Cost, High-Precision Optical Measurements STEVEN STETZLER, E. CRAIG DUKES, Univ of Virginia — We describe an inexpensive platform used to make precise optical measurements of object dimensions using a standard desktop flatbed scanner. Recently, low-cost, high-resolution flatbed scanners have become available. With a resolution in excess of 1000 ppi, standard flatbed scanners rival the accuracy of traditional measurement devices such as calipers. We investigate the use of an inexpensive flatbed scanner for making rapid measurements of the dimensions of simple objects, and compare the measurements with reference measurements made with a high-caliber Optical Coordinate Measuring Machine, a device that is orders of magnitude more expensive. Using such a device will open up costly, labor intensive precision measurements to anyone. Initial results on components to be used in the Mu2e experiment promise measurements with an accuracy of ± 0.050 mm and rapid turn around.

Steven Stetzler
Univ of Virginia

Date submitted: 14 Oct 2016

Electronic form version 1.4