replacing TSF17-2017-000100.

Abstract Submitted
for the TSF17 Meeting of
The American Physical Society

**The Optics of Lightguides for use in the NEXT-100 detector**

RYAN CLARK, University of Texas at Arlington — Lightguides are an effective means of increasing the resolution of light detectors versus increasing the number of silicon photomultipliers(SiPM). By guiding incident light from one surface to another, we can minimize the number of SiPMs required. The Neutrino Experiment with Xenon Time Projection Chamber (NEXT) is seeking to use a one meter diameter lightguide in its TPC as part of their NEXT-Wheel project. The purpose of NEXT is to observe neutrino-less double-beta decay $math0\nu\beta\beta$ which would determine if the neutrino is its own anti-particle. This talk will cover the manufacture and optics of acrylic lightguides on smaller scales as a proof of concept for the up-scaled NEXT-Wheel.

Ryan Clark
University of Texas at Arlington

Date submitted: 28 Sep 2017 Electronic form version 1.4