

Abstract Submitted
for the DNP17 Meeting of
The American Physical Society

Optical fibers and electronics for the STAR Event Plane Detector¹ CATHERINE TOMKIEL, Lehigh University, STAR COLLABORATION — The Beam Energy Scan (BES) program at the Relativistic Heavy-Ion Collider has shown hints of a critical point and first order phase transition at the BES energies. Key measurements for locating the critical point and determining the first order phase transition are limited by poor event plane resolution, limited statistics and a TPC-only centrality determination. A new event plane and collision centrality detector (EPD) is planned to replace the existing detector, the Beam-Beam Counter (BBC), with higher granularity and acceptance. The design of the EPD consists of two scintillator discs at $z = 3.75\text{m}$ from the center of STAR, covering $2.2 < \eta < 5.1$. The signal from the scintillator is carried by wave-length shifting fibers, to clear fibers to be read out by silicon photomultipliers (SiPM) - an inexpensive and magnetic field insensitive replacement for the traditional phototube. In this talk we will discuss the construction of the fiber bundles, their installation and performance as well as their integration into the STAR electronics system.

¹NSF Grant 1614474

Catherine Tomkiel
Lehigh University

Date submitted: 30 Jun 2017

Electronic form version 1.4