Abstract Submitted
for the APR17 Meeting of
The American Physical Society

The Fast Interaction Trigger Detector of ALICE at the LHC KEENAN LAMBERT, SHANICE BROWN, CALVIN POWELL, AUSTIN HARTON, EDMUNDO GARCIA-SOLIS, Chicago State University, ALICE - FIT TEAM — CERN (European Center for Nuclear Research) is a global laboratory that studies proton and heavy ion collisions at the Large Hadron Collider (LHC). ALICE (A Large Ion Collider Experiment) is one of four large experiments at the LHC. ALICE is dedicated to the study of the transition of matter to Quark-Gluon Plasma in heavy ion collisions. The experiment is preparing for the LHC upgrade after the second long shutdown (LS2) in 2019-20. To this end, ALICE is undertaking a major initiative to extend its physics capabilities. Among these improvements is a new Fast Interaction Trigger (FIT). The FIT will be replacing the current T0 and V0 trigger detectors. The purpose of the FIT will be to determine multiplicity, centrality, and reaction plane. The FIT will also serve as the primary forward trigger, luminosity, and collision time detector. This presentation will discuss the FIT upgrade and the results from the performance of the FIT detectors in simulations and test beams that support the current design parameters. This material is based upon work supported by the National Science Foundation under grants NSF-PHY-1407051, NSF-PHY-1305280, NSF-PHY-1613118, and NSF-PHY- 1625081.

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Date submitted: 07 Sep 2016 Electronic form version 1.4