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**Event Plane Resolution Simulations for The Fast Interaction Trigger Detector of ALICE at the LHC** ISIAKA SULAIMON, AUSTIN HARTON, EDMUNDO GARCIA, Chicago State University, ALICE-FIT COLLABORATION — 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 of the LHC. ALICE is dedicated to the study of the transition of matter to Quark Gluon Plasma in heavy ion collisions. In the present ALICE detector there are two sub-detectors, (the T0 and V0), that provide minimum bias trigger, multiplicity trigger, beam-gas event rejection, collision time for other sub detectors, on line multiplicity and event plane determination. In order to adapt these functionalities to the collision rates expected for the LHC upgrade after 2020, it is planned to replace these systems by a single detector system, called the Fast Interaction Trigger (FIT). In this presentation we describe the performance parameters of the FIT upgrade; show the proposed characteristics of the T0-Plus and the simulations that support the conceptual design of this detector. In particular we describe the performance simulations of the event plane resolution. This material is based upon work supported by the National Science Foundation under grants NSF-PHY-0968903 and NSF-PHY-1305280.

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