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Expected Performance of the Fast Interaction Trigger (FIT) for the Upgrade of the ALICE Detector¹ BERNARD BOSTON, EDMUNDO GARCIA-SOLIS, AUSTIN HARTON, 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 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 the Time of Flight detector (TOF), on line multiplicity and event plane determination. In order to adapt these functionalities to the collision rates expected for the LHC upgrade of 2018, it is planned to replace these systems by a single detector system, called the Fast Interaction Trigger (FIT). Two sensor technologies are proposed for FIT, they represent improvements of the current T0 and V0 detectors (T0-Plus and V0-Plus). 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.

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