

Abstract Submitted
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The Fast Interaction Trigger (FIT) Upgrade to the ALICE experiment at the CERN LHC¹ NOAH MILLER, JENNIFER KLAY, California Polytechnic State University San Luis Obispo, ALICE COLLABORATION — The purpose of the ALICE experiment at CERN is to investigate the properties of the strongly interacting quark-gluon plasma formed in the high-energy collisions of lead nuclei in the CERN Large Hadron Collider. ALICE has been collecting data since 2009. The upcoming upgrade of the CERN LHC injectors during 2019-20 will boost the luminosity and the collision rate beyond the design parameters for several of the key ALICE detectors including the forward trigger detectors. The new Fast Interaction Trigger (FIT) will enable ALICE to discriminate beam-beam interactions with a 99% efficiency for the collisions generated by the LHC at a rate of 50 kHz for Pb-Pb collisions and a rate of 200 kHz for p-p and p-Pb collisions. The FIT detector will be the main forward trigger, luminometer, and collision time detector. It will also determine multiplicity, centrality, and reaction plane of heavy ion collisions. We are involved in the development of the Cherenkov array for FIT, which will employ quartz radiators coupled directly to micro channel plate based photomultiplier (MCP-PMT) light sensors. This talk will present an overview of the FIT detector and the new research capabilities that it will enable ALICE to explore after the 2019-20 LHC upgrade.

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Noah Miller
California Polytechnic State University San Luis Obispo

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